VOL. XIX NEW YORK—THURSDAY, OCTOBER 15, 1908—CHICAGO No. 16

THE AUTOMOBILE

Long Island Motor Parkway Has Its Racing Initiation

BY a monster speed carnival, in which all previous American road records were surpassed and stock cars of many makes scored amazing figures in an automobile battle-royal, the Long Island Motor Parkway was inaugurated Saturday, October 10, as a racing course, whereon for all time, without breaking any laws and with safety to contenders and spectators, automobiles may be driven in competition or for pleasure. The assured and partially realized establishment of this great auto speedway and parkway, the results of Saturday's contests, and the possibilities of the course as a trial ground mark the beginning of an era that will mean much to the advancement of the American industry and the popularity of the automobile as a high-speed pleasure vehicle. The successful

Lytle and Winning Isotta Ascending One of the "Hills" of the Parkway Stretch Where the Main Highway Is Crossed.

initiatory of the parkway also gives promise, in the class of the contenders and in the comparative speed results, of a Vanderbilt race on October 24 that will mean no loss of prestige to America's great classic road race.

The outcome proved the practicability of the innovation of combining several contests among variously graded machines at different distances, and also set a fashion that is likely to be frequently followed in future long-distance stock car races on the road. Endurance runs, under varied or average highway conditions as tests of serviceability, and hill climbs, as proof of power under grade emergencies, are convincing to many, but it is doubtful whether the arbitrament of sustained speed over long distance does not appeal most strongly to the majority. This has been European experience. The selling success that has followed notable speed successes in this country would seem to confirm to a considerable extent the European ideas. Hitherto it has been sought to supply the fancied want by track contests, but their practical results have paled by comparison with those of such great road races as the Vanderbilt, the Savannah, the Briarcliff, and the Lowell. The building of the Long Island motorway is a great step toward furnishing this form of test; in fact, the Long Island cement stretch has actually solved the problem of a safe and lawful speed arena.

While interest was naturally greatest among the general public in the contention of the cars of the highest price and power, the struggles of those of lesser value were closely followed by those who looked to the series of sweepstakes to furnish evidence of the relative speed and road qualities of the various models and price classes; in a word, by the members of the automobile cult whose choice and purchase are affected by such car demonstrations. And their friends buy likewise.

The big race of the day, of course, was the Motor Parkway Sweepstakes, whose finish came after the contenders in the other five sweepstakes had run their course, gathered their respective laurels, and earned their thousand dollar prizes. It had added interest from the fact that its list embraced several prominent Vanderbilt Cup cars and drivers. There were Herbert Lytle, a well-known Vanderbilt Pope-Toledo driver and who also successfully piloted an Apperson at Savannah, at the wheel of Clifford V. Brokaw's Isotta; Louis Strang, probably well entitled to be called the American road champion, who has just been retained permanently by Paul LaCroix, in the Renault; Charles Basle in the Knox, which finished second in the Lowell race; F. Lescault with the Simplex that captured the last Brighton Beach 24-hour race, and Willie Haupt and the Chadwick he had driven so successfully in the present season's hill climbs.

Strang's Renault Flying Past Grandstand.

Strang, through his victories with the Isotta in the Savannah, Briarcliff, and Lowell contests, and Robertson, by his win of the Brighton Beach 24-hour race and his more recent triumph at Philadelphia, have earned the premiership among our drivers in critical and public estimation. The outcome of the Motor Parkway Sweepstakes easily places Lytle on a par with these two, and assures America of a trio instead of a duo of drivers in the international races at hand that bid fair to give as good an account of themselves against the foreign cracks as did Joe Tracy with the Locomobile in the last Vanderbilt race.

Under Lytle's brilliant pilotage the Isotta added the Motor Parkway Sweepstakes to its Savannah-Briarcliff-Lowell honors, and, incidentally, annexed a new American long-distance road record as well. It covered the ten laps of the 23.46-mile course, 234.6 miles, in 3 hours 39 minutes 10 seconds. It averaged 64.25 miles an hour, as compared with the best previous American average of 61.43 miles, scored by Wagner when he won the 1906 Vanderbilt Cup race with the Darracq.

Strang made a game chase with the Renault, tying the Isotta the first lap, but from that point on being gradually and very slowly outfooted, finishing 11 minutes 15 seconds behind the Italian car. Strang had made the run in 3 hours 50 minutes 25 seconds and scored an average of 61.20 miles per hour, which was but a shade under Wagner's former record. The Itala was third, the Simplex fourth, and the Chadwick fifth. The Knox and Hotchkiss completed but six and five laps, respectively.

The Meadow Brook Sweepstakes at 211.14 miles, for cars from $3,001 to $4,000, fell to the Allen-Kingston, driven by H. Hughes, a car that has made heretofore most of its reputation in short and long-distance track events. It made the run averaging 52.6 miles per hour. Mrs. Joan Newton Cuneo's Rainier, of Glidden tour fame, piloted by L. A. Dis-

brow, ran a creditable second at an average of 52.2 miles per hour. The Lancia, driven by W. M. Hilliard, third, averaged 47.9 miles. This car possessed the smallest cylinders, 3 1-2 bore by 3 7-8 stroke, of any car in the race, except the Nassau little fellows. It made the 211.14-mile run on 13 gallons of gasoline, an excellent showing.

Another newcomer to the metropolis, a Sharp-Arrow, so new and so insignificant from the point of production, being the creation of a Trenton, N. J., enthusiast, as to be looked upon as a free lance. W. H. Sharp, who drove it, walked away with the Garden City Sweepstakes at 187.68 miles, with an average of 56.4 miles an hour. As a matter of fact, this average was beaten by only two cars in the entire sweepstakes, the Isotta and the Renault. The Sharp-Arrow is an assembled car with a Continental engine. There was talk after the race of a protest of the car on the ground that there had not been a sufficient product to comply with the stock car rules requirements. It was claimed at its pupply pit, however, that 40 of the cars had been produced. William Bourque's Knox, which is entered for the Vanderbilt Cup, finished second, with an average of 45.2 miles an hour.

Chalmers-Detroit Overhauling Buick.

The two Chalmers-Detroit candidates for the Jericho Sweepstakes, for cars from $1,001 to $2,000, made a most successful and impressive racing debut. They ran first and second, and were driven, respectively, by W. H. Burns and J. D. Ainslie. The winner covered the 140.76 miles at an average of 48.65 miles per hour. The average of the second to finish was 46.1. Their nearest pursuers were a pair of Mitchells.

Among the little fellows in the Nassau Sweepstakes, for cars of $1,000 and under, the Buick had it pretty much all its own way, making the 93.84 miles run with an average of 44.1 miles per hour.

The contest of the tires was also closely watched. It was Michelin's day, for Michelins were on the Isotta and Renault, the first and second in the big race, and on the winning Allen-Kingston, Sharp-Arrow, and Buick. Diamonds scored first and second in the Jericho with the Chalmers-Detroit pair.

The race was remarkably free from accidents of all kinds, either to men or machines, considering the large number of starters. In fact, but one participant was injured. In rounding a curve a Stoddard-Dayton, driven by A. C. Miller, threw off its mechanic, William La Motte, breaking his arm. Another Stoddard-Dayton, with K. Wright at the wheel, was ditched and put out of the race in the first lap. A Palmer & Singer, piloted by Ray Howard, was put out of the race by running into a fence, but neither of its crew was injured. The Chalmers-Detroit "40," which L. B. Lorimer drove, ran into a dog and broke its radiator. The latter leaked so badly that the car discontinued the contest. Two instances were reported of spectators being hit by flying pieces of metal or wood as the cars rounded the turns.

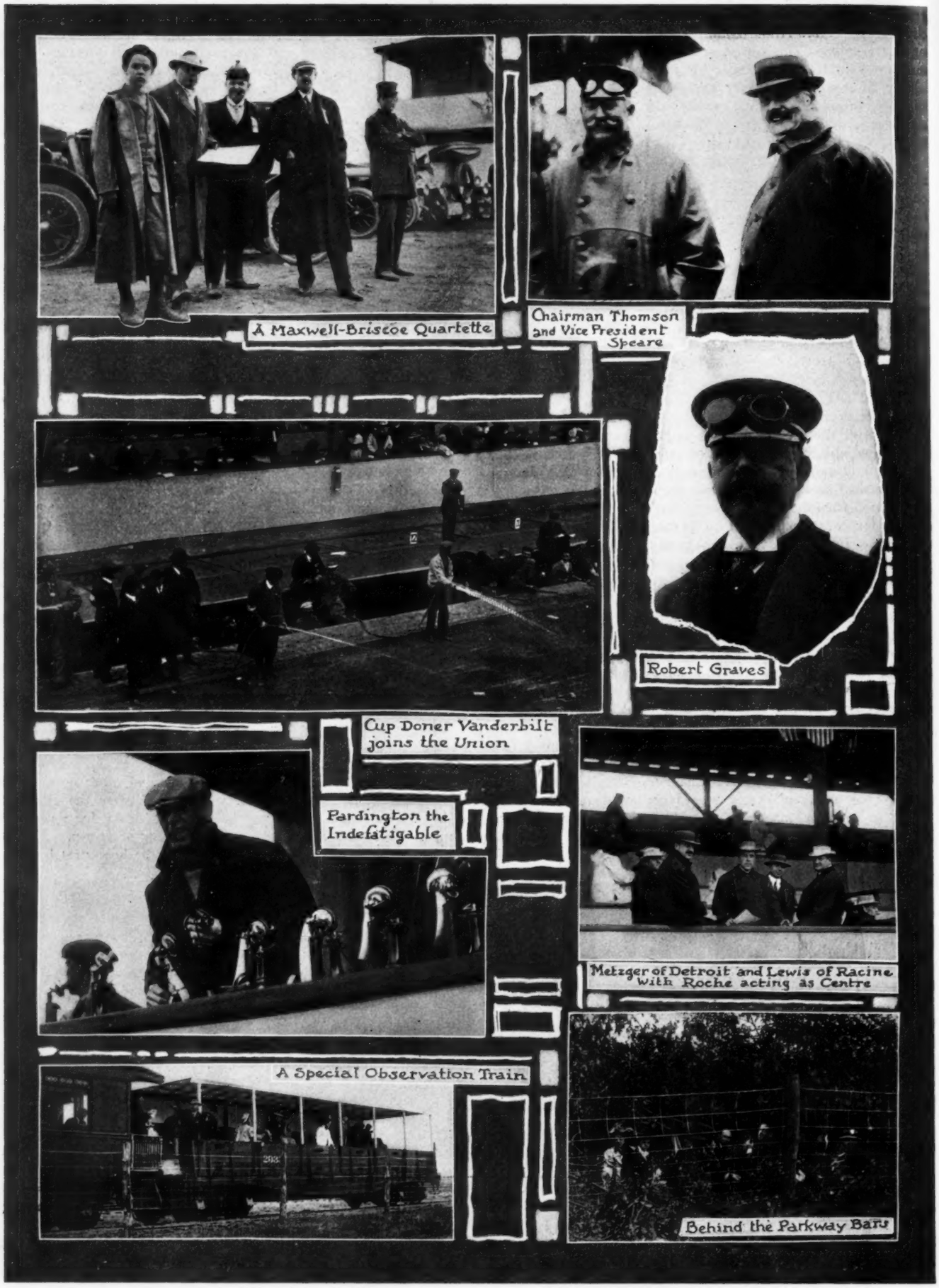
The management of the race by the A. A. A. and Motor Parkway officials was excellent, William K. Vanderbilt, Jr., acting as referee. The protection of the spectators was efficient. There was a large corps of Pinkerton men along the homestretch in the neighborhood of the grandstand. At other points of the route were stationed deputies, a large number in the aggregate. The Parkway cement stretch was well protected by a high wire fence, though this stretch runs for most of the way through the barren Hempstead plain and really was too isolated to be in danger of congested crowds, anyhow. Flagmen encorded the entire course to signal the drivers.

At the start and finish the Motor Parkway Company had erected a monster permanent stand seating 5,000 people and opposite thereto a two-story structure for officials and newspaper men. At the front of the grandstand were several rows of commodious boxes, behind which seats rose in tiers to the great roof, in itself an innovation for racing stands. The front of the stand and boxes was hung with purple cloth; festoons of the shields and flags of all automobile racing nations surmounted the pillars; and above the roof floated great American flags.

The official and press stand was most complete in its equipment. Above were score boards for each sweepstakes. The main floor was given over to long tables for the newspaper men. Behind them were booths for the telegraph operators and 15 telephones. The officials had a compartment to themselves at the tape end, and in the corner was a most hospitable bar. In the second story were Charles J. Dieges and S. M. Butler and other members of the New York Timers' Club, who looked after the clocking; the scorers' tables, and more benches and desks for newspaper men. There was an abundance of room for pressmen.

The most novel and interesting part of the homestretch equip-

The Chalmers-Detroit Winner Which Easily Won Its Class, with Another of Its Kind in Second Place.


A Maxwell-Briscoe Quartette
Chairman Thomson and Vice President Speare
Robert Graves
Cup Doner Vanderbilt joins the Union
Pardington the Indefatigable
Metzger of Detroit and Lewis of Racine with Roche acting as Centre
A Special Observation Train
Behind the Parkway Bars

ment, however, was the row of supply pits that stretched in front of the grandstand for its entire length. There was space enough between the pits and the track for racing cars to stop for their supplies. Mountains of tires were dumped into the pits in the aggregate, to say nothing of the rivers of gasoline and oil. It was highly interesting to watch the crews take on their supplies and make their adjustments. There were at times repairs made that were of hitherto unaccustomed frankness. It is safe to say, however, that when possible the more serious work was reserved for the other official supply station on the backstretch. So far as the grandstand pits showed, however, there seemed remarkably little repairing and adjusting to be done.

There Was Not Much Tire Trouble.

In front of the grandstand stretched the long broad ribbon of white cement, plain to the view for a mile in either direction. To the west it approached over a hill that bridged an intersecting highway and disappeared to the east beneath a bridge that furnished a crossing for another road. The surface of the cement was roughened to prevent skidding, and at the turns the path was well banked. There had been fears that the rough surface would prove hard on tires. This turned out not to be so. On the contrary, there was less tire trouble reported than at any former road race. In fact, Peter Prunty's once familiar announcement, "Stopped by tire troubles," was heard only occasionally.

So smoothly and swiftly did the racing cars speed over the level surface of the parkway stretch that some pilots were forced into the belief that their machines were not making as rapid progress as they did over the smooth country roads that made up two-thirds of the circuit. In fact, "Herb" Lytle stoutly maintained that the Isotta traveled ten miles an hour faster over the backstretch than it did over the parkway. The truth is the monotony of speeding over a uniform surface and the absence of any resistance or necessity for swerving to pick a path deceived the pilots. One has heard the novice drivers over Ormond Beach complain that they were disappointed in the speed the beach gave. The watch soon undeceived them, just as it undoubtedly would were the time taken over the parkway stretch. It would, by the way, be most interesting at the Vanderbilt Cup race could there be devised some way of getting and announcing the times the cars made from the beginning to the end of the parkway stretch, or from its start to the grandstand.

The start for the race from town began before daylight for the general public. The Long Island Railroad had arranged for a big and frequent train service. The first was advertised to leave at 5 o'clock. It was fully half an hour late in starting and was made up of seven cars only fairly well filled. The early racegoers were dumped out on a siding behind the stand with a quarter of a mile walk across the meadows ahead of them. When they reached the stand only A. R. Pardington and a few employees and Pinkertons were on the ground. Soon, however, automobiles began to arrive, coming down the course from the toll gates, and took their stations on the broad borders on either side of the path. The distant bridge soon filled with cars, whose owners had framed up this fine viewpoint. Before the race began there were perhaps a hundred cars between the grandstand and the bridge. The grandstand was slow in filling. To tell the truth, it did not nearly fill. There were spectators in perhaps half the boxes and a thousand or so in the seats. The crowd was swallowed up by the monster stand. Along the country highway section of the course there were thousands of people and hundreds of cars in the aggregate. That the grandstand was isolated in an unknown district, that big fees were charged for seats and parking spaces, that the viewpoints elsewhere on the course were free, and that the sweepstakes being merely a curtain raiser to the near-at-hand Vanderbilt race suffered by comparison so greatly as to injure the attendance, were among the guesses given for the patronage of the center point of the struggle being so unexpectedly small. Some thought that the splitting of the race into sub-divisions, while novel and interesting from a trade standpoint, lacked the concentrated attraction of a single contest, from which a single individual winner was to be evolved.

Parkway Curves Are so Scientifically Constructed that the Cars Had no Difficulty Whatever in Sustaining the Highest Speed.

At 8 o'clock, an hour before the time set for the start, Fred J. Wagner, the official starter, arrived and set to work to get the racers into line. It was an easy task for this experienced hustler to line them up in a double row, with even numbers on one side and the odd on the other, the various classes or sweepstakes following one another in the order set for their start.

Just before this Referee Vanderbilt had driven up in a big touring car with three friends. He wore a long overcoat instead of the usual natty "knickers" and Norfolk jacket. It was an overcoated and fur-wrapped crowd. A chilling wind blew stiffly from the north and officials and spectators promenaded briskly to keep warm. The shivering newspaper men found writing hard with benumbed fingers. The drivers had a cold ride ahead of them.

Many Prominent in Sport and Industry.

In the throng along the homestretch were many men prominent in the sport and industry. With so many makes of cars represented, their backers alone made quite a noteworthy array of trade leaders. There were conspicuous evidences of a truce in the racing war, if not an end to it altogether. A. A. A. and A. C. A. officials were both on hand and commingling in apparent fraternity. The rival chairmen, Thompson and Morrell, chatted cordially together, and Secretary Butler busied himself with preparations for the timing and scoring with as much hustle as though the scene was Savannah and the Grand Prize was about to be started.

Sharp at 9 o'clock "Wag," with Charley Dieges and "Sam" Butler at his side, the former holding a big ship chronometer and the latter with notebook in hand, sent away the first of the little fellows, a Mitchell, a candidate for the Nassau "thousand." The other Nassauvians were started at half minute intervals. The first of the Jericho outfit was started at 9:05, the Garden City at 9:10, the Meadow Brook at 9:15, and the Parkway at 9:20, the cars in each leaving at the same half minute intervals. But four of the 37 entrants failed to face the starter. They were the Garford, Pennsylvania, Cleveland, and Moon cars.

And When the Races Were On.

The first car to complete a lap was the Buick. It had gotten by the Gyroscope and Mitchell, and made the 23.46-mile round in 30:55. A string of cars followed at short intervals and so fast that the announcer and the tally sheet-keepers in the press box were soon lost in the shuffle. There was confusion for a few minutes, and then "Hank" Caldwell, A. B. Tucker, and others came to the rescue with score slips which they read aloud. Even after that it meant lively hustling for the scribes to keep tally of the race, so fast and frequent was the passing of the cars. Even in the first two laps cars overtook and passed cars of the sweepstakes starting ahead of them. The best battles of all the classes were those of the little fellows in the Nassau and the big 'uns in the Parkway.

In the early stages of the race the duel between the Isotta and the Renault was intensely exciting. Lytle and Strang were tied to a second the first round, but the next lap the former Pope pilot gained some three minutes on the three-cup winner, Strang. The Italian car, as a matter of fact, pulled away from the French machine at an average rate of a minute a lap, though Strang reduced Lytle's lead to four minutes in the seventh round. The Knox gave Lytle and Strang a close run for the leadership in the first round, but after that dropped back into the ruck. The Itala got into third place in the fourth round and was never dislodged therefrom to the finish. The Hotchkiss was never dangerous after the third lap. The Chadwick put up a good fight for third place for six rounds, but after that was passed by the Simplex.

Though the Allen-Kingston led all the way in the Meadow Brook, the Rainier, a newcomer in the racing field, gave it a pretty good rub from start to finish, being beaten out by less than three minutes. The little Lancia did wonderfully fast work, considering its small cylinders. Hilliard negotiated laps in the "28's" practically the entire way, but this was not quite fast enough to win in company so much higher powered.

The Sharp-Arrow had things practically all its own way after two laps in the Garden City, and well it might, for it proved itself second in speed only to the Isotta and Renault. Its runaway, however, did not come until the third lap, for Burman (Buick), Lorimer (Chalmers-Detroit), and Howard (Palmer & Singer) all led it to the first lap. In fact, Howard led his field for two laps until the Palmer & Singer met with its accident and had to quit, its time having been 23:43 for the first and 48:29 for the second lap, as against 24:48 and 49:19 for the Sharp-Arrow. Much had been expected of the P. & S. car, and its disappearance was a source of disappointment to many. The Chalmers-Detroit pair had the Jericho practically all to themselves, the only car to dispute their leadership and continue the race to the end being a Mitchell, driven by Frank Zirbies.

This Part of the Parkway Resembles a Huge Circular Track, but the Curve Is so Gradual that Top Notch Speed Was Possible.

The Nassau was the merriest of merry scrambles, from which Hugh Easter and his Buick emerged a leader at every lap of the biggest field of the whole race, thus atoning largely for the disappointment Mr. Durant had experienced in Robert Burman's failure to win the Garden City.

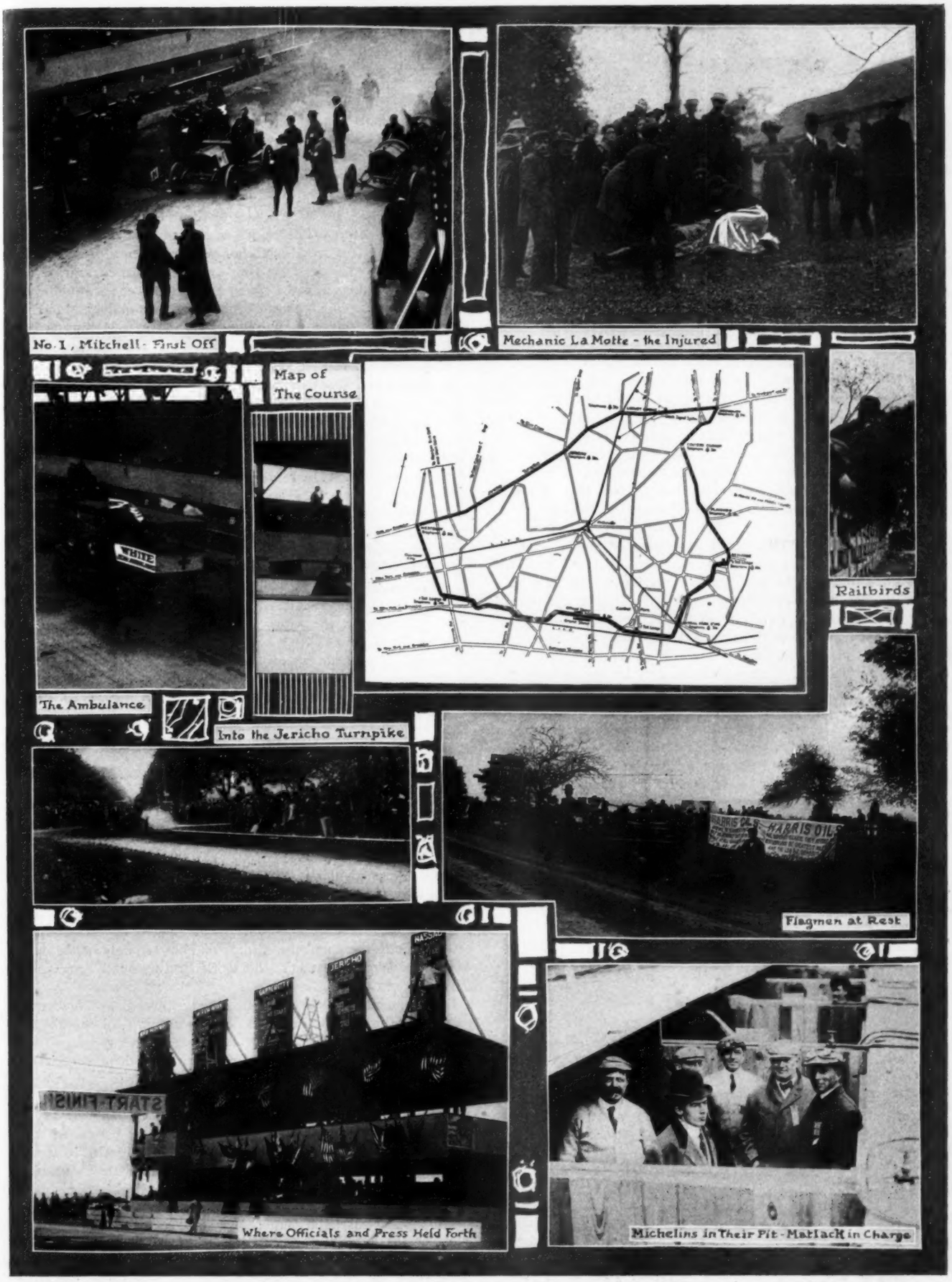
TECHNICAL SIDE OF THE FIRST TRYOUT OF 1909 CARS

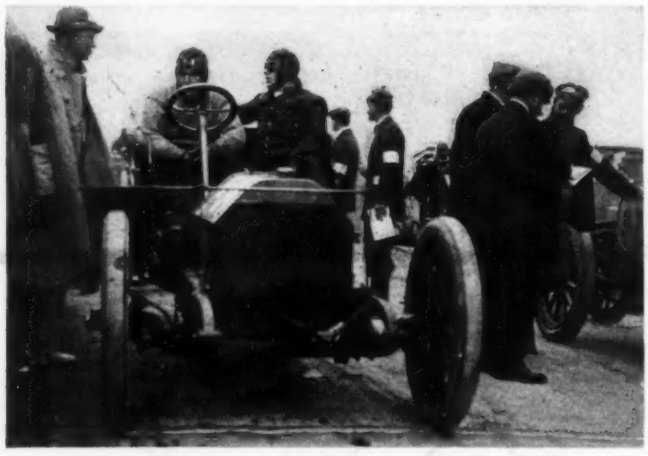
By CHARLES B. HAYWARD.

ALTHOUGH it was scheduled as a race, and presented to the public as an event of this character, last Saturday's canter round the Long Island course, preliminary to the holding of the Vanderbilt Cup race on the 24th, was in reality a competitive tryout of new models where a number of the entrants were concerned—the first on the slate for the new cars of next season, as well as the first of its kind ever held in this country. American manufacturers maintain a high standard where what is known as the "trying-out" process is concerned, and, before receiving the final seal of approval, a model is usually run a year or more on experimental work, while each replica of the standard thus evolved is given a thorough running-in by the factory tester before it goes to the body shop and thence to its new owner.

But what makers have been hankering after has been an opportunity of trying-out their new productions each year in competition with the cars of other makers. This, the Sweepstakes events, held on the Long Island Motor Parkway and adjacent roads last Saturday, provided in hitherto unprecedented manner. True, there were some that were not new models, mostly in the foreign entries, but the majority came under this head, and the performance of the various entrants gave prospective purchasers an excellent opportunity of judging of the merits of the new productions of quite a number of makers.

It was essentially a battle of four-cylinder cars, as with the single exception of the Chadwick, piloted by Willie Haupt, who fought for top-line honors in the Motor Parkway sweepstakes, there was not another six-cylinder car to score, and, as a matter of fact, but one other was entered. At the other end of the line,


No. 1, Mitchell - First Off
Mechanic La Motte - the Injured
Map of The Course
Railbirds
The Ambulance
Into the Jericho Turnpike
Flagmen at Rest
Where Officials and Press Held Forth
Michelins in Their Pit - Matlack in Charge



Lancia, Pilot Hilliard, and Director Tangeman.

in the Nassau sweepstakes class, there were a couple of exceptions to the four-cylinder rule in the shape of the twin-cylinder Reo and the lone representative of the one-lunger class, the little Cadillac. Otherwise, it was largely a case of piston displacement on the basis of four cylinders, as apart from the higher-powered cars in the star event of the day, which were almost equally divided between chain and shaft-driven types, the great majority of the entrants formed a more or less close approach to a standard of construction in the shape of a shaft-driven car that is now very general.

If the results of a race could be predicated solely upon the efficiency of the motor and the various essentials of its transmission in delivering the power to the driving wheels as a basis, it would be easy to mechanically classify the contenders according to their order of finishing, barring mishaps that could not well be taken into account in such a summing up. But it has been shown time and again that not only generalship in driving, but also that final tuning up, which can only be done properly by the skilled hand, is of paramount importance, while the element of luck holds every driver's destiny more or less in hand from start to finish, so that the best efforts of the designer and maker are not always rewarded to the fullest extent.

Isotta.—This car has been a top-liner so often during the racing season of the present year that its principal features have become very well known, as the contender on the Parkway last Saturday was a duplicate of the machine that Strang has piloted to victory on three other occasions this year. It is nominally rated at 60-horsepower, but is naturally capable of an output considerably in excess of this, particularly as its motor can be run at a very high speed without a falling off in its power, owing to the unusually large size of its valves.

Stoddard-Dayton in the Grandstand Stretch.

Sharp-Arrow.—Except insofar as its mechanical details could be judged from an exterior view, this car was as much the dark horse of its class technically considered as it was from every other point of view, as it was an eleventh-hour entrant about which little was known at first and its successful performance only served to deepen the mystery. It came out later that it was equipped with a Continental motor, and in all probability its other essentials came from equally well-known parts makers, so that as an assumption of what its mechanical details may be, a four-cylinder motor of 40-50 horsepower, some standard type of clutch, a four-speed selectively operated gear-set with final drive by shaft, many of these details naturally being self-evident, will doubtless not be far wrong. Its designer was at the wheel.

Allen-Kingston.—The "A-K" is a car that has given evidences of its capacity for speed and endurance on racing occasions during the past year. It has a four-cylinder motor measuring 5 by 5 3-4 inches and is rated at 40-45 horsepower, a Bosch high-tension magneto supplying the ignition, while a pump and circulating system takes care of the oiling, and a Breese carbureter completes the essential accessories.

Chalmers-Detroit.—Owing to the numerous features in which this little 24-horsepower car differed from its competitors in its class, its performance was looked forward to with a great deal of interest and much was expected of it. Its four-cylinder motor is cast *en bloc* with both the intake and exhaust passages integral, while the circulation of the cooling water is on the thermo-syphon principle. Dual ignition is provided, consisting of a Bosch high-tension magneto and a standard set of unit coils and timer fed by a storage battery. The clutch is of the multiple-disc type and the sliding gear-set, acting selectively, provides three forward speeds, the motor, clutch and gear-set all being combined so as to form an extremely compact and light power-plant. Lubrication is effected by means of an extremely simple and reliable circulating system employing a gear-driven pump, while the carbureter is the same type as is used on the Chalmers-Detroit Forty.

Buick.—This little 18-horsepower car proved considerable of a surprise to those who were trying to figure the chances of the entrants in the small car class, particularly as the use of a two-speed planetary gear is not considered the best possible equipment for racing purposes. This car's four-cylinder motor measures 3 3-4 inches "square," while its most important accessories consist of a Bosch high-tension magneto, a Hill Precision lubricator, and a Kingston carbureter.

Some Creditable "Also Ran" Performances.

While the public usually concerns itself with the winners alone, the observer who keeps his eyes open during the course of a race, and particularly at the finish, can often find more cause for congratulation in the performance of the cars that missed getting all the glory in their classes than those that shone forth most brightly in the lime-light of the tape. In the first two classes, the Renault and the Knox stand out strongly, while in the Meadowbrook sweepstakes, the work of the small Lancia was positively eye-opening.

For instance, the Renault was the standard 35-45 horsepower put out by this firm and the fact that its average for the distance was but three miles less than its much higher-powered rival hardly calls for any comment. In the case of the Knox, it was more difficult to judge of what Bourque had to run against as no one solved the mystery of the Sharp-Arrow.

Doubtless the most phenomenal performance put up by any of the cars, considering its horsepower ability as compared with others in its class, was that of the Lancia, which with its 3.5 by 3.9-inch cylinders was pitted against cars nominally rated at 50 horsepower and concededly capable of a great deal better, so that its average of better than 47 miles an hour for the entire distance is not alone remarkable, but shows what a very close approach it made to the performance of cars of double its size. The absolute uniformity with which the laps were reeled off is also noteworthy, as its time differed but a few minutes at the most, and was frequently only seconds apart for the various laps.

RACE GOSSIP GATHERED FROM VARIOUS SOURCES

Auto Notables on Hand.—Noteworthy among the trade leaders at the trackside were: H. B. Joy and M. J. Budlong, of the Packard Motor Car Company; E. T. Birdsall, of the Selden Motor Vehicle Company; C. H. Tangeman and Harry Fosdick, of the Hol-Tan Company; C. A. Singer, of the Palmer & Singer Manufacturing Company; R. M. Owen, sales agent for the Reo and Premier; C. M. Hamilton, of the Isotta Import Company; Paul LaCroix, of the Renault American agency; John Matlack, of the Michelin Tire Company; W. M. Lewis and C. P. Skinner, of the Mitchell Motor Car Company; Alfred Reeves, of the American Motor Car Manufacturers' Association; A. R. Whitney and Ralph Newton, of the Stoddard-Dayton agency; Carl H. Page, of the Chalmers-Detroit and Peerless agencies; Hugh Chalmers, R. D. Chapin, and H. E. Coffin, of the Chalmers-Detroit Motor Company; W. E. Metzger, of the Everitt-Metzger-Flanders Company; E. Lillie, of the Itala Import Company; E. H. Broadwell, of the Fisk Rubber Company; John T. Rainier, of the Rainier Motor Car Company; C. G. Stoddard, of the Dayton Motor Car Company; S. A. Miles, of the N. A. A. M.; E. P. Chalfant and C. F. Clarkson, of the A. L. A. M.; W. F. Wright and C. R. Culver, of the Knox Automobile Company; A. G. Southworth, of the Buick agency; Herbert Githens, of the G. & J. Tire Company, and Charles Meyers, of the Diamond Rubber Company; L. R. Speare, S. L. Haynes, J. P. Coghlin, W. H. Chase, Paul Wolff, Secretary F. H. Elliott, and other A. A. A. directors.

Converted to Racing.—Hugh Chalmers, Roy D. Chapin, and Percy Owen were conspicuous at the Chalmers-Detroit pit. The rôle of backers of the racing game was a bit new to Messrs. Chalmers and Chapin, though Mr. Owen is a veteran of the early days and a former Gordon-Bennett pilot. The double success of the Chalmers-Detroit on its debut in speed competition also made enthusiastic converts of the Detroit members of the trio. In future they may be found flying higher.

Want a Night of It.—One of the reasons advanced for the small attendance of the general public at the race, as compared with that of previous Nassau County contests, was that being started at 9 o'clock it did not appeal to the sporty crowd, which liked an excuse to make a night of it, nor to those seeking the novel adventure of midnight race going. It was argued that thousands of people would travel by night to see a race that started at daylight, who would not get up at daylight to get to a race that started at 9 o'clock.

"Darn That Band."—Music had no charms for the scribes who were striving to catch the times from Peter Prunty's megaphone and "Hank" Caldwell's mouth organ. The newspaper fraternity is unanimous in its demand that the band be moved across the course to the grandstand from its present location alongside the press box. They say, by the way, that by Vanderbilt race time there will be score boards in front of the press stand to stop newspaperdom's frantic howls for "Time."

Physicians on Hand.—Dr. Louis N. Lanehart, of the Nassau Hospital, was at the grandstand with a corps of surgeons and trained nurses prepared for any emergency. A White steam ambulance was also in readiness for a quick run to the hospital at Mineola, should there be an accident.

To the Vanderbilt by Electricity.—By the time of the Vanderbilt race the Long Island Railroad will have completed its line of electric poles to the siding at the rear of the grandstand. This electrification of the service will vastly quicken it.

Evidence of Peace.—Former A. C. A. Presidents Colgate Hoyt, and Winthrop E. Scarritt, Chairman Robert Lee Morrell, and Secretary S. M. Butler were in evidence at the starting point. Mr. Butler superintended the timing and scoring.

"Suppose It Rains?"—"Suppose it should rain on Vanderbilt Cup day what would happen those poor devils in the supply pits?" asked one of the inveterate trouble-seekers.

A Smooth-Faced Referee.—The photographers had an excuse to snap the much-pictured referee repeatedly, for since the last race Mr. Vanderbilt has shaved his mustache.

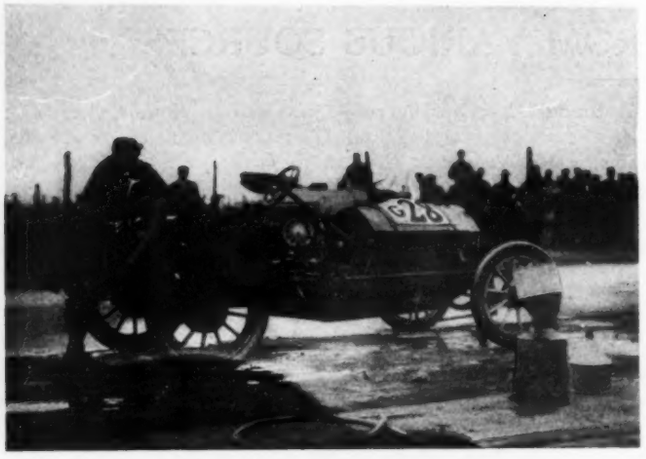
Garden City Hotel Crowded.—Though there was not the hurrah at the Garden City Hotel that is incident to the night before a Vanderbilt race, there was enough of a crowd on hand to force the management to put several beds in rooms.

Little Fellows Slowed Big 'Uns.—The drivers of the big cars all agree that the obstruction of the small cars on the course made a big difference in the time, owing to their slowing down constantly through fear of collision. Lytle is sure that the Vanderbilt will show at least five miles an hour better.

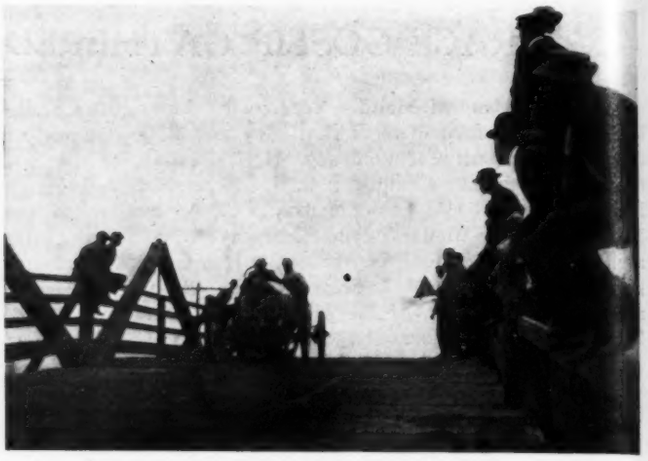
Fosdick Averts Danger.—Some one undertook to water the stretch in front of the supply pits, several mechanics having complained of the dust. Harry Fosdick, however, protested, since the mixture of oil drippings and water endangered some car skidding into the pits. A spectator's clothes, by the way, were ruined through a wheel spinning and throwing the greasy muck on him.

Chadwick, Haupt Driving, Ascending the "Hill."

Congressman Chases Fakirs.—One of the biggest outlying crowds was gathered at the junction of the Jericho turnpike and the old Westbury road. Some light-fingered gentry set up some roulette wheels there. It happens that the crossroads at this point adjoins the estate owned by Congressman William W. Cocks, of automobile law fame. Mr. Cocks landed suddenly on the scene and without ado kicked over the table and put the gamblers to flight. One of them attempted to again set up his wheel in an adjoining field. By this time the congressman had his fighting blood up and the rural croupier did not dare even to look back until he had put a mile of road behind him. Some three-card monte men, by the way, tried to work the first race train out of Long Island City, but they found the early bird mechanics and newspaper men too "wise guys" to fall for their game and they only got the laugh along the aisles of the cars when they tried to catch a victim.



Sharp-Arrow, One of the Parkway Surprises.



Railbirds on Bridge Enjoying the Racing.

TABULAR STORY OF THE SWEEPSTAKES WITH WHICH LONG ISLAND MOTOR PARKWAY WAS OPENED.

MOTOR PARKWAY SWEEPSTAKES, 234.6 MILES—For Cars Selling Over $4,000.

No.	CAR	Driver	1	2	3	4	5	6	7	8	9	10	Total	Fastest Lap	Avg. Lap	Average Miles per Hr.
P42	ISOTTA	Herbert Lytle	22.17	43.42	65.06	86.25	107.49	129.00	154.09	176.09	197.30	219.10	3:39:10	21:11	21:55	64.25
P46	RENAULT	Lewis Strang	22.17	46.26	69.34	92.35	115.29	138.10	160.37	183.15	205.48	230.25	3:50:25	22:27	23:03	61.20
P47	ITALA	G. Lechleiter	25.56	51.23	76.30	101.10	126.11	153.02	178.21	203.23	228.15	253.09	4:13:09	24:40	25:19	15.6
P43	SIMPLEX	F. Lescault	34.30	58.27	81.22	111.22	135.02	158.20	181.45	205.12	228.57	256.21	4:16:21	22:51	25:38	55.0
P41	CHADWICK	W. Haupt	26.13	50.35	75.43	103.16	127.51	154.32	192.49	220.24	244.03	267.57	4:27:57	23:39	26:48	52.7
P45	KNOX	Charles Basle	22.46	71.01	137.03	173.30	214.23	252.36	.....	.....	.....	.....	.....	22:46	.....	....
P44	HOTCHKISS	J. Kilpatrick	23.46	47.19	70.55	93.58	116.43	.....	.....	.....	.....	.....	.....	22:45	.....	....

MEADOW BROOK SWEEPSTAKES, 211.14 MILES—For Cars Selling from $3,001 to $4,000.

No.	CAR	Driver	1	2	3	4	5	6	7	9	Total	Fastest Lap	Avg. Lap	Avg. Miles per Hr.
M35	ALLEN-KINGSTON	H. Hughes	25.33	54.30	79.11	103.19	127.17	164.15	188.42	214.23	240.47	4:00:47	23:58	26:45	52.6
M32	RAINIER	L. A. Disbrow	27.44	55.27	83.16	110.16	137.20	164.13	190.54	217.32	243.42	4:03:42	26:19	27:05	52.2
M34	LANCIA	W. M. Hilliard	29.42	58.35	86.45	114.52	149.09	177.48	206.05	235.08	264.15	4:24:15	28:07	20:24	.....
M36	RAINIER	Axel Peterson	28.14	75.14	104.09	130.12	156.14	182.14	208.02	233.24	.....	.....	25:22	.....	47.9

GARDEN CITY SWEEPSTAKES, 187.68 MILES—For Cars Selling from $2,001 to $3,000.

No.	CAR	Driver	1	2	3	4	5	6	7	8	Total	Fastest Lap	Av. Lap	Avg. Miles per Hr.
G28	SHARP ARROW	W. H. Sharp	24.48	49.19	73.45	97.56	121.59	150.05	174.47	199.34	3:19:34	24:03	24:57	56.4
G27	KNOX	W. Bourgue	39.03	87.13	115.11	142.30	168.09	197.46	222.32	249.11	4:09:11	25:06	31:09	45.2
G21	STODDARD-DAYTON	A. R. Miller	38.39	58.06	84.25	109.37	162.22	188.59	214.54	251.52	4:11:52	24:27	31:29	44.8
G26	BUICK	R. Burman	23.40	53.29	81.45	106.41	130.48	154.09	191.01	.....	.....	23:21	.....	....
G25	STODDARD-DAYTON	H. Tuttle	29.07	67.19	93.33	120.02	147.53	193.04	.....	.....	.....	26:14	.....	....
G22	CHALMERS	L. B. Lorimer	24.38	62.13	104.34	130.21	.....	.....	.....	.....	.....	24:38	.....	....
G24	PALMER-SINGER	Ray Howard	23.22	46.29	.....	.....	.....	.....	.....	.....	.....	23:22	.....	.....

JERICHO SWEEPSTAKES, 140.76 MILES—For Cars Selling from $1,001 to $2,000.

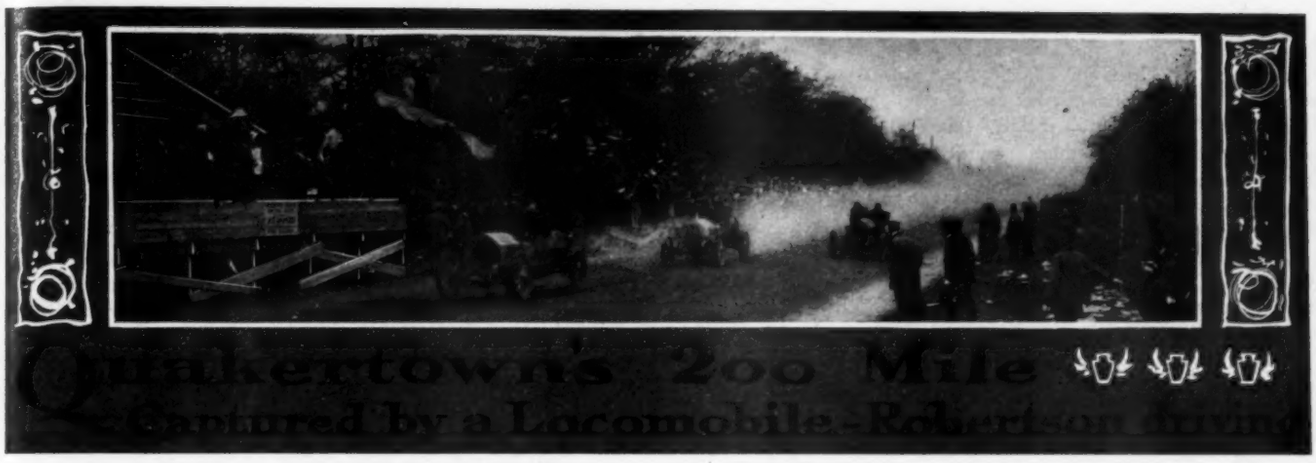
No.	CAR	Driver	1	2	3	4	5	6	Total	Fastest Lap	Avg. Lap	Avg. Miles per Hour
J11	CHALMERS	W. R. Burns	29.10	.....	.....	.....	.....	.....	.....	27:57	30:26	48.65
J16	CHALMERS	G. J. Ainslie	39.26	57.07	87.41	119.08	150.31	182.36	3:02:36	24:57	32:03	46.1
J18	MITCHELL	F. Zirbes	49.01	64.23	96.28	128.52	161.25	192.00	3:12:00	32:18	37:46	39:2
J13	MAXWELL	Charles See	50.54	87.45	123.55	156.13	189.04	226.07	3:46:07	28:24	.....	.....
J15	SELDEN	Charles Young	29.42	180.54	109.18	.....	.....	.....	.....	29:42	.....	.....
J12	MITCHELL	C. A. Kerchoff	53.57	03.14	.....	.....	.....	.....	.....	53:57	.....	.....

NASSAU SWEEPSTAKES, 93.84 MILES—For Cars Selling for $1,000 and Under.

No.	CAR	Driver	1	2	3	4	Total	Fastest Lap	Avg. Lap	Avg. Miles per Hour
N3	BUICK	Hugh Easter	30.55	67.10	97.23	127.52	2:07:52	30:55	31:58	44.1
N4	CAMERON	F. F. Cameron	33.54	67.59	101.54	135.52	2:15:52	33:54	33:58	41.7
N1	MITCHELL	W. Olney	32.28	71.04	108.12	142.23	2:22:23	32:28	35:36	39.6
N5	MITCHELL	H. R. Cousins	33.04	68.05	113.42	150.02	2:30:02	33:04	37:30	37.6
N7	BUICK	L. H. Titus	43.32	79.43	119.09	150.04	2:30:04	30:55	37:31	37.5
N6	CADILLAC	F. W. Darnstadt	44.02	94.13	135.06	194.13	3:14:13	40:53	48:33	49.2
N8	REO	A. F. Camacho	36.29	72.41	108.30	.....	.....	35:53	.....	.....
N2	GYROSCOPE	C. White	99.53	105.05	.....	.....	.....	49:53	.....	.....

The Air-cooled Cameron Starting on Its Journey.

Here's Where the Parkway Passes Under the Main Road.



Quakertown's 200 Mile Race Captured by a Locomobile-Robertson driving

PHILADELPHIA, Oct. 10.—Amid the plaudits of as many of the more than four hundred thousand spectators as could get within eyeshot of the finish, George Robertson to-day drove his Locomobile "40" across the line a winner of first honors in the Founders' Week 200-mile stock chassis road race. Cyrus Patchke with a 45-50 Acme finished second, over twelve minutes behind. Ralph Mulford, 50-horsepower Lozier, was third, and Bert Maucher, a local driver, came in fourth with his 38-horsepower Peerless. The course was 7.8 miles long, and 25 circuits were made—195 miles.

The sixteen contestants were all lined up awaiting the road for fully a half-hour, and the first car was started just as the factory whistles in the nearby city sounded the signal for beginning the new day's toil at 7 o'clock. They were sent on their 195-mile journey at half-minute intervals in the following order:

Car.	Cyls.	H.P.	Driver.	Tires.
1. Maxwell	4	28	H. Bittner	Ajax
2. Apperson Jack Rabbit	4	48.4	George Davis	Diamond
3. Peerless	4	38	Bert Maucher	Diamond
4. Pullman	4	40	Max La Roche	Diamond
5. Thomas*	6	70	George Salzman	.....
6. Studebaker	4	38.5	Frank Yerger	Diamond
7. Chadwick	6	50	Jack Harkins	Diamond
8. Stoddard-Dayton	4	34.5	E. C. Ireland	Contin'tl
9. Locomobile	4	40	J. W. Florida	Firestone
10. Locomobile	4	40	George Robertson	Firestone
11. American Locomotive	6	60.	L. J. Bergdoll	Fisk
12. Palmer & Singer	6	60	Wm. Wallace	Contin'tl
14. Acme	6	45-50	Cyrus Patchke	Diamond
15. Lozier	4	45	H. Michener	Contin'tl
16. Pennsylvania	4	38	Len Zengle	Diamond
17. Lozier	6	50	Ralph Mulford	Contin'tl

*Substituted for Welch 6-51, withdrawn.

The race was hard-fought from the start to near the finish. Just how close it was can be gathered from the fact that at the beginning of the 20th lap—148.2 miles—seven of the nine cars still in the race were separated by less than a lap. At that point Robertson's time on the leading Locomobile was 3:05.14. "Bill" Wallace, in the 60-horsepower Palmer & Singer, who occupied seventh position, was a little over eight minutes behind the Locomobile, for when he flashed past the tape the clocks registered 3:13:41. Just at this point a smash-up or persistent tire trouble could have sent any one of the others into the lead, but Robertson played safe, and by continuing to grind out 9:30 laps, according to the schedule, he finally wore down his opponents. Five cars covered the entire distance, although Florida's Locomobile was shut off from an official finish by the crowd. Frank Yerger's Studebaker was also running, five laps behind.

Robertson, who has many victories to his credit, can hardly appreciate any of them as highly as he did that of to-day. Not only was his win witnessed by a record-breaking crowd, but unless he has a particularly level head it was at least temporarily turned by the adulation of the hero-worshiping Quakers. Mayor Reyburn, who handed out the plunder after the race, metaphorically patted him on the back to the limit; Mrs. Reyburn insisted on poor, blushing "Robby" taking a bunch of American beauties, and when the crowd yelled "Speech!" the winner looked helplessly about, almost dropping the huge $2,000 Founders' Week cup that he hugged in his arms, and begged Glenn Ethridge, his mechanician, to "crank 'er up and let's get out of this." But the crowd was so dense that the winning Loco simply couldn't get through, and its team had to go through a course of handshaking such as would have made a presidential candidate's arm sore for a week.

It was a great day for Robertson and Ethridge and the Locomobile, not to mention the Firestone tires, which had carried the combination to a well-earned victory. The Acme, which finished second, was fitted with Diamond tires, as was the Peerless, which came in third. The Mulford Lozier, which finished in fourth place, carried Continental tires.

The fastest bit of work in the race was seen during the Lozier 50's tenth lap, when Mulford, in an effort to get up—he was five minutes behind the leader at the time—sent his car around the circuit in 8:32, creating a new record.

While the victory is the Locomobile's, it might not have been possible without Robertson. Over such a course, with no long straights, heady driving counts more than in a long circuit, with five and ten-mile straightways. On a long course the car's speed has a more direct relation to the result; on the Fairmount Park circuit intelligent driving is more than half the battle. There were speedier cars in the race than the Locomobile, but there were no headier drivers than Robertson. He nursed his tires on the turns; he took no chances on "grandstand" work. Those who, perhaps, were disappointed at his victory, said "Luck!". He made but one stop, it is true, but that was because he treated his car and his tires as tenderly as the conditions of a bruising race would permit. When, at the conclusion of the 15th lap, he considered it advisable to replenish his fuel, he passed the word to be ready with a complete set of tires when he came around on the next lap. All hands were ready, and the car had hardly come to a standstill before the Loco helpers were all over it like a colony of ants. In less than three minutes he was off. Organization helps.

Patchke, in the Acme 40-45, was compelled to make four stops —three for tire trouble (all on the road, away from the control) and one for fuel. These it was that helped keep him back. His car was fully as fast as the Loco, but his tire troubles, occurring, as they did, at points far removed from the Acme control, put all the work on him and his mechanician, Jere Price. Not a few valuable minutes were lost to the Acme-Patchke combination in consequence.

When interviewed after the race, Robertson was quite modest over his victory and was as ready to ascribe his success to good luck as were some of the disappointed ones. "We hadn't the semblance of an accident," he said, "and my car ran just like a well-taken-care-of watch. We stopped but once, and did everything needed to the car then, including the putting on a full set of Firestones. The tires we started with were not bad, but we had a little in bank, and played things safe. The course was not a fast one, and I early realized that any one who attempted to 'beat it' would come to grief. I figured it out that the Loco outfit could stand a 50-mile gait and win. I adhered to that schedule as nearly as I could."

Patchke, whose Acme finished second and won the MacDonald & Campbell cup, and who also captured a diamond ring for himself, said: "We lost our chance when our tires began to give way, as luck would have it, as far as possible from our control. Price and I had to 'get on the job' three times, and once you fall behind on that course, there is little chance of getting to the front, unless the leaders 'get theirs'. They didn't, and there you are." Asked to explain, he corroborated Robertson's statement that a speed in excess of 50 miles an hour meant trouble. The only stretch where sustained speed was possible, along the West River drive, was somewhat soft, the oil with which it had been liberally treated having filtered through the loose top dressing and leaving the surface mushy.

Ralph Mulford, driver of the Lozier "six," while somewhat disappointed over the result, said he might have won had the race been twice as long. "We were on the same lap with the leaders right up to the 20th round, when we lost six minutes with a bad tire. We showed what we could do on the tenth lap, when we made the fastest circuit of the day." And he showed the *North American* trophy which he had captured as the result of that fast bit of work.

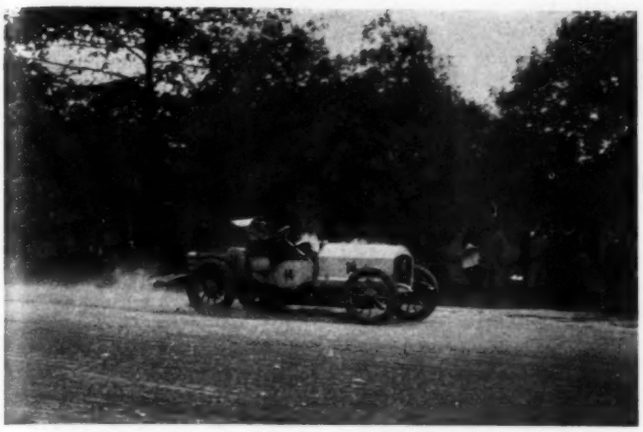
Salzman won the *Record* cup for making the fastest time in the first lap with the Thomas—8:57. The *Press* trophy for the best average time and the *Evening Telegraph* cup for the most uniform time for the 25 laps have not yet been awarded.

It was a bleak morning, with a strong northeast wind chilling the marrow of the thousands of sport-loving Quakers who had left their warm couches to witness the novelty of a big road race right at their doors, as it were. All the trolley cars were put at work an hour earlier than usual to accommodate the huge crowds who flocked to the park. Many automobile parties went out to the course shortly after midnight in order to secure favorable positions to witness the race; not a few of them provided themselves with the materials for making coffee, and as dawn broke the scene suggested an immense army just waking to the day's activities—lacking the canvas and the instruments of warfare, of course. At the big camp on Belmont avenue, the handlers of the various cars and the tire men were up betimes, several of the racers taking slow trips over the course to finally size it up before the actual race should be on.

The spectators were gratified at the early announcement that the Thomas would start. The A. A. A. officials had limited the number of entries to sixteen, and there were several disappointed candidates when the limit was reached. Erwin R. Bergdoll, however, withdrew his Welch, and as the Thomas was first substitute, it was given the coveted place. It looked like a winner for six laps and then went to the discard with a broken crankshaft.

The management of the whole affair from the beginning was excellent. The mayor was in his place in the official grandstand for five long hours, and under his eye Superintendent of Police Taylor had his men on their mettle. Only one criticism was heard, and that was as to the rather primitive score-board provided. This was built over the press stand, and apparently for the sole benefit of the grandstand occupants. If the press men wanted to see it, they were compelled to descend to the ground and walk out in front of the press stand, jostled meanwhile by the horde of "officials" who seem to do everything but officiate. The score board had but two lines on it—one for laps, the other for time. Whoever built it evidently thought a baseball battle was to be fought out. As each lap was finished, the assistant scorers would sponge out the official time of the car for the previous lap and chalk in the new time. Woe betide the pressman who failed to be on the job when the times were announced! If he wanted to get them later, if he couldn't borrow them from a fellow-reporter, he had to climb a ladder to the scorers' box, access to which was thus made purposely difficult to keep out "undesirables."

Robertson, the Locomobile Winner, Receiving from Mayor the Founders' Week Cup.



Acme Moving Some on a Straightaway Stretch.

The race was unique in several respects. In the first place it was held over a course within a half-hour's ride of a city of a million and a half of people, who could reach the scene of the contest by the expenditure of a nickel. Besides, it was a practical holiday, being the last day of a most successful series of public spectacles in honor of Founders' Week. Visitors from out of town who had never seen an automobile race flocked to the park by tens of thousands. Any portion of the course could be reached via park trolleys for an additional nickel, and but for this fact and the numerous points of vantage around the entire eight miles of the course, there would have been such a congestion at the start-finish as to have seriously interfered with the race. The affair, however, was in the hands of the city. Mayor Reyburn, himself an enthusiastic autoist, felt the city's responsibility, and it was through the excellent work of the 1,500 police and Fairmount Park guards that the course was kept clear.

Quaker City Club Received Mayor's Praise.

The Quaker City Motor Club furnished the flagmen, and they and the "coppers" worked so well together that the Mayor went out of his way after the race to hunt up the Quaker club committee and congratulated them on the thoroughness of their arrangements. Almost the entire eight miles of the circuit had to be roped off, so dense were the crowds. At those points where there was possibility of an accident, the spectators were especially numerous. Sinuous Sweet Brier hill, where the Thomas went out with a broken crankshaft, was an especial favorite with the morbid bloodthirsty ones who scented a possible tragedy; so were Neill drive, and the "Y" turn at the T. A. B. fountain. Here it was that the "cops" had their work cut out for them.

The course, while well policed, was not well suited to the purposes of the speedsmiths. In the first place it was too short—less than eight miles—and had too few straights in it. Those drivers who attempted to take liberties with it suffered the penalty. Michener and his Lozier "45" were eliminated by a tricky "Y" turn at the foot of George's hill. "Mitch" attempted to take the turn at too high a rate of speed, and over the Lozier went. Thousands of the spectators who had gathered there hoping to see some such calamity rushed to the scene. Fortunately, the force of police just there was a heavy one, and they beat the crowd back while the unfortunates were being put on their feet. Neither was seriously hurt, and a few minutes later both were perched in their wrecked car smoking as unconcernedly as if a spill were an everyday affair and watching the other contestants striving for the prize they had hoped to win.

Apperson Which Figured Prominently in the Battle.

A few minutes later the little Maxwell "28" broke its crankshaft on the ugly "S" turn on Neill drive, and Bittner and Smith dragged their car to the side and watched the race from that vantage point. Then the Stoddard-Dayton was stopped for nearly an hour with valve trouble, and got going again only to be stopped on the next round by a stripped pump gear. Next the big Thomas, which had been burning things up, came to grief with a broken crankshaft while descending Sweet Brier hill. The Pullman "40," driven by La Roche, broke a wheel at the bumpy Belmont avenue crossing, and retired. The other retirals were voluntary, being ascribable to the loss of time due to tire troubles, with no hope of catching up.

The control stations were lined up for half a mile along Belmont avenue. Here it was that the men "behind the guns"—those whose work renders success possible—labored like fiends, with thousands looking on and applauding their efforts. Each time a car would run up to the long platform the crowd would surge nearer to get a view of what was doing, and the numerous "cops" on duty here had their hands full maintaining sufficient elbow room for the repair and tire men to work unhindered.

TABULAR STORY OF THE 200-MILE RACE FOR THE FOUNDERS' CUP, IN FAIRMOUNT PARK, PHILADELPHIA, SATURDAY, OCTOBER 10, 1908.

No.	CAR	1st Lap	2nd Lap	3rd Lap	4th Lap	5th Lap	6th Lap	7th Lap	8th Lap	9th Lap	10th Lap	11th Lap	12th Lap	13th Lap	14th Lap	15th Lap	16th Lap	17th Lap	18th Lap	19th Lap	20th Lap	21st Lap	22nd Lap	23rd Lap	24th Lap	25th Lap
10	LOCOMOBILE	9:52	19:36	29:07	38:07	48:04	57:31	1:06:55	1:16:26	1:25:48	1:35:16	1:44:33	1:54:12	2:03:43	2:13:09	2:22:28	2:32:11	2:46:31	2:55:53	3:05:14	3:14:41	3:24:03	3:33:30	3:43:15	3:52:52	4:02:30
14	ACME	10:19	20:26	30:32	40:43	51:56	1:01:32	1:11:32	1:21:31	1:32:26	1:41:37	1:51:39	2:01:36	2:11:38	2:21:35	2:31:31	2:41:27	2:51:26	3:02:38	3:12:49	3:23:15	3:33:33	3:43:49	3:54:09	4:04:26	4:14:54
17	LOZIER	14:41	24:04	33:29	42:48	52:44	1:02:48	1:11:05	1:20:03	1:31:04	1:39:36	1:49:13	1:58:51	2:08:32	2:18:09	2:31:58	2:42:12	2:51:47	3:01:30	3:11:13	3:26:45	3:36:21	3:55:54	3:55:30	4:06:55	4:17:26
3	PEERLESS	9:57	24:24	34:23	44:31	56:51	1:05:14	1:15:04	1:26:11	1:36:37	1:47:14	1:51:41	2:08:02	2:18:17	2:26:46	2:38:41	2:49:08	3:01:22	3:11:20	3:21:25	3:31:29	3:41:29	3:51:29	4:01:28	4:11:35	4:21:26
9	LOCOMOBILE	9:59	19:37	29:11	38:45	48:20	57:51	1:07:25	1:17:04	1:26:37	1:36:14	1:45:57	1:55:31	2:05:13	2:14:50	2:24:46	2:34:36	2:46:21	2:56:53	3:05:44	3:15:22	3:27:39	3:37:37	4:03:30	4:14:56	*
2	APPERSON	10:28	19:39	29:11	38:41	48:15	59:36	1:11:05	1:20:34	1:29:56	1:39:30	1:48:52	1:58:23	2:07:50	2:17:20	2:26:46	2:39:11	2:48:46	2:58:17	3:07:50	3:17:36	3:47:59	†			
11	AMERICAN LOCOMOTIVE	10:03	20:54	29:41	39:40	49:37	59:41	1:09:47	1:19:54	1:30:02	1:40:03	1:49:50	1:59:54	2:09:53	2:19:59	2:29:57	2:40:00	2:49:55	2:59:58	3:10:01	3:20:00	†				
12	PALMER & SINGER	9:27	18:42	27:58	37:16	46:43	55:15	1:05:39	1:21:42	1:30:07	1:39:35	1:48:58	1:58:23	2:07:48	2:26:32	2:36:10	2:45:33	2:54:31	3:04:15	3:13:41	3:27:59	†				
6	STUDEBAKER	12:40	22:45	33:09	43:32	54:23	1:04:27	1:14:50	1:25:29	1:35:38	1:46:03	1:56:12	2:06:19	2:16:29	2:59:23	3:09:30	3:19:49	3:30:02	3:45:14	3:55:43	*					
16	PENNSYLVANIA	10:08	20:10	30:07	40:47	51:56	1:02:46	1:12:54	1:28:56	1:40:09	1:59:18	2:10:25	†													
7	CHADWICK	11:33	23:23	33:16	43:18	53:53	1:11:40	1:29:28	1:39:50	1:49:55	2:00:06	2:29:02	2:38:58	†												
5	THOMAS	8:57	17:37	26:32	38:47	47:32	56:22	Broke crankshaft.																		
8	STODDARD-DAYTON	10:29	20:45	31:00	41:21	53:21	1:43:14	Valve hung up on 6th lap; stripped pump gear 7th lap.																		
4	PULLMAN	10:44	24:34	34:23	47:20	Smashed left rear wheel.																				
1	MAXWELL	11:31	22:42	33:46	Broke crankshaft.																					
15	LOZIER	9:47	Tire blew out; car overturned at T. A. B. Fountain t.irn.																							

*Still running when race was stopped.
†Dropped out.

Sample Stretch of the Average Road in the Thousand-mile Reliability.

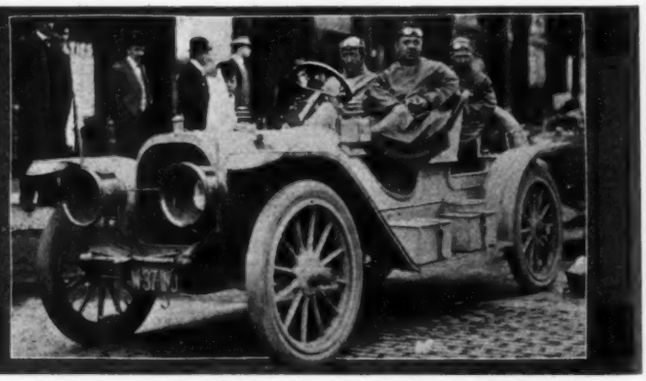
CHICAGO, Oct. 12.—Progress made in the construction of American automobiles in one year is furnished by the results of the four-day 1,000-mile reliability run of the Chicago Motor Club, which was finished last Friday and in which five of the seventeen cars that started were hall-marked perfect both for the road work and mechanical efficiency at the finish, when the technical committee made a rigid scrutiny of the survivors: two Haynes cars, a roadster and a touring car; a Pierce Arrow touring car, a Premier roadster, and a Franklin touring car, being found to be without a loose bolt or nut, without a broken part, with all wheels true; in fact, there was not the slightest chance for the technical committee to find fault. A year ago, when this same club promoted a three-day run of 600 miles and in which thirty-five cars competed, only one was found perfect at the end. There were a dozen which had escaped penalization on the road, but the mechanical examination disclosed broken parts or something loose that eliminated all but Nutt's Haynes roadster. The scrutiny of Messrs. Beecroft, Edwards, and Nadall last Friday night, however, failed to bring to light a single instance of a loose nut even on the thirteen cars examined, while it was a remarkable fact that every engine was hitting as regularly as if it had just come out of the tester's hands. That's a remarkable testimonial to the efficiency of the 1908-1909 crop of American-built cars when it is remembered that these five perfect machines had just run 1,000 miles without an adjustment, without a break of any sort, and with the motors running all the time outside of controls.

The Chicago Motor Club contest was a remarkable one in many ways, for in it were included three different angles—car reliability, tires, and gasoline consumption, in each division of which there were prizes offered.

The tire competition was entirely new in American competitions, this being the first time any promoting organization has attempted to tabulate the work of the pneumatics. It was rather an awkward proposition to tackle, but the technical committee evolved a set of regulations by which the penalizations against the different makes of tires were computed on a basis of 2 points per man per minute of labor, whether inflating or changing inner tubes or casings. No difference in penalty was imposed between punctures and blowouts, the only criterion being time spent. No additional penalties were imposed where demountable rims or quick detachables were used. Any make of tire eligible for the trophy had to be represented by two complete sets, but the only makes so represented were the Diamond and Goodrich, the former having six cars and the latter three. The Diamond was the winner, having a penalty of 11.4 points average against each tire, or a total of 274 points against the twenty-four tires. The Goodrich had an average penalty of 25, or a total of 300 against the twelve tires. The Apperson and No. 14 White, both fitted with Diamonds, went through without a puncture, or any work done on them.

While economy tests are no new propositions, the one held in connection with the Chicago run was the longest on record and shows more than any of the others, for the conditions were the same as the average tourist encounters. There was no adjustments of carbureters to make a good showing in this line, for the main consideration was the reliability end of the event, and so the contestants had to pay the greatest attention to that, with the result that the gasoline showing can be taken as an excellent criterion of the abilities of the various cars in the fuel consumption line. The trophy in this was put up by the Standard Oil Company, and was awarded for the smallest consumption under the Chicago Motor Club formula, in which the weight of the car with load was divided by the fuel consumption in ounces. Under this formula the winner was the Premier roadster, driven by Ray McNamara, which showed a pound mileage of 224.1. But the Premier also distinguished itself in the line of straight fuel consumption regardless of the formula, for it used the least gas of any, going through the four days, on 69 1-4

Perfect Score Haynes Touring Car, Wagoner Driving.



Perfect Score Haynes Runabout, Nutt Driving.

gallons, or an average of 15.18 miles per gallon. Altogether two main trophies were offered by the club, one for roadsters and the other for touring cars, as well as medals in the various classes, which were made according to price. The results brought about two ties in the roadster division in which the Haynes and the Premier were perfect, while there were three touring cars, the Franklin, Haynes, and Pierce-Arrow, without a mark against them. There will be no run-off, however, the club officials declaring that the cars have done all that was asked of them and that they can see no reason to ask the entrants to continue in what really means a test in which the main objects is to wreck the survivors, whereas the object of the original test was to demonstrate the efficiency of the modern car. The classes did not fill as well as expected, and in consequence there were several walkovers. Class E, for touring cars costing from $2,000 to $2,499, secured the keenest competition but brought about no winner, the Franklin and Haynes having perfect scores.

The report of the technical committee on the winners in all three competitions is an interesting one and is as follows:

ROADSTER DIVISION WINNERS.

No.	Car.	Driver.
8.	Haynes, 35-horsepower	Frank Nutt
9.	Premier, 32-horsepower	R. McNamara

Class E, for touring cars costing $2,000 to $2,499—Franklin and Haynes, perfect; Marmon, 2 points; No. 14 White, 21 points; No. 12 White, 55 points.

Class H, for touring cars costing $4,000 and up—Pierce-Arrow, perfect, won.

OFFICIAL REPORT OF THE TIRE COMPETITION.

DIAMOND CONTESTANTS—

No.	Car.	No. of Tires.	Points Penalty.
5.	Apperson	4	0
14.	White	4	0
9.	Premier	4	52
16.	Haynes	4	68
19.	Marmon	4	68
8.	Haynes	4	86
	Total	24	274

Total penalty 274 points divided by 24 equals 11.4.

GOODRICH CONTESTANTS—

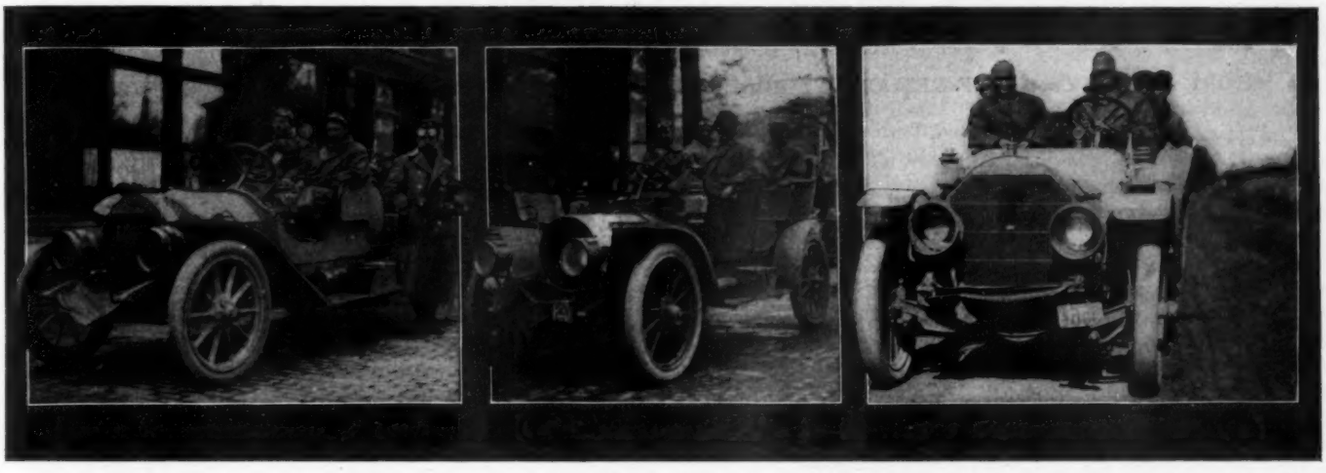
No.	Car.	No. of Tires.	Points Penalty.
20.	Pierce-Arrow	4	24
7.	Pierce-Arrow	4	32
15.	Franklin	4	244
	Total	12	300

Total penalty 300 points divided by 12 equals 25 points.

Particular attention is called to the Diamond tires fitted on cars No. 5 and 14, all of which went the 1,000 miles without work of any nature being done on them. In addition to the cars fitted with Diamond and Goodrich tires, there were four others fitted respectively with Hartford, Ajax, Michelin, and Fisk tires, the last mentioned being attached to demountable rims. Their standing is as follows:

12.	White	Fisk	20
3.	Mason	Hartford	76
2.	Maxwell	Ajax	210
4.	Mason	Michelin	246

Four other contesting cars which failed to complete the 1,000 miles of the contest, or did not check into the night garage, had no recognition taken of the tires used.



Premier Perfect Score Performer, McNamara Driving.

Franklin Clean Score Survivor, Carris Driving.

Pierce-Arrow Which Survived Faultlessly, Hofmann Driving.

TOURING CAR DIVISION WINNERS.

No.	Car.	Driver.
15.	Franklin, 28-horsepower	C. S. Carris
16.	Haynes, 36-horsepower	L. Wagoner
20.	Pierce-Arrow, 60-horsepower	P. Hofmann

The final standing of the field was as follows:

ROADSTERS.

No.	Car.	Score.
8.	Haynes	Perfect
9.	Premier	Perfect
7.	Pierce-Arrow	1 point
5.	Apperson	32 points
3.	Mason	224 points
11.	Ranier	Withdrawn
6.	Midland	Withdrawn
1.	Reliable Dayton	Withdrawn

TOURING CARS.

No.	Car.	Score.
15.	Franklin	Perfect
16.	Haynes	Perfect
20.	Pierce-Arrow	Perfect
4.	Mason	2 points
19.	Marmon	2 points
14.	White	21 points
2.	Maxwell	51 points
12.	White	55 points
17.	Studebaker	Withdrawn

No winners were reported in classes A and F owing to the withdrawal of the Reliable Dayton in the former division and the lack of an entrant in the latter. Winners in the other classes were:

Class B, for cars selling from $1,000 to $1,999—No. 3 Mason, 2 points, winner.

Class C, for cars selling from $2,000 to $2,499—No. 5 Apperson, 32 points, winner.

Class D, for cars selling from $2,500 up—Haynes and Premier, perfect; Pierce-Arrow, 1 point.

Class E, touring cars costing up to $1,999—No. 4 Mason, 2 points, winner; Maxwell, 51 points.

RESULTS OF THE GASOLINE CONSUMPTION TEST.

No.	Car.	Passenger Load.	1st D. Gal.	2d D. Gal.	3d D. Gal.	4th D. Gal.	Weight Load.	Total Con.	Pound Mileage.
8.	Haynes	3	21	22 1-2	21	20 1-4	3,675	64 3-4	198.
9.	Premier	3	19	13	20	17 1-4	3,585	69 1-4	224.1
4.	Mason	4	19	15	20	15 3-4	2,735	69 3-4	170.
15.	Franklin	4	18	15	22	15 7-16	3,255	70 7-16	200.
2.	Maxwell	4	16	18	21	19 3-8	2,950	74 3-8	171.3
3.	Mason	4	24	20	24 1-2	18 7-8	2,615	87 3-8	119.
16.	Haynes	4	28	22	23	20 7-8	4,000	93.7-8	184.5
5.	Apperson	3	26	22	24	24 3-4	3,420	96 3-4	153.
7.	Pierce	3	29	27	28	26	4,230	110	169.5
19.	Marmon	4	34	31	27	27	5,060	119	183.5
20.	Pierce	6	32	30	35	31 1-2	5,575	128 1-2	187.5
14.	White	4	39	33	38	35 3-8	4,630	145 3-8	137.9
12.	White	4	43	35	40 1-2	34 1-2	4,765	153	134.5
1.	Reliable Dayton	4	Withdrawn.						
6.	Midland		Withdrawn.						
11.	Rainier	3	Withdrawn.						
17.	Studebaker		Withdrawn.						

Upon the completion of the run Friday afternoon each car was officially weighed with its load, then sent to Eighteenth street between Indiana and Prairie avenues for the brake and clutch tests, in both of which all the survivors showed up exceedingly well. From that point the cars were sent back to the garage and turned over to the technical committee for the mechanical examination. At that time there was nine cars left with perfect road scores, but the examination put out four of them. The Pierce-Arrow roadster was penalized a point for its fan belt being off. It was lost the first day, but the car ran without one the rest of the journey, Kumpf not desiring to be penalized for breaking a seal. The Marmon lost a point for its fan belt being off, while another point was added for a leak in the air line that creates the pressure on the gasoline feed. The No. 12 White was found to have its oiler chain off the sprocket, which cost it 20 points, while another point was given for the fan being out of commission. The No. 4 Mason was penalized 2 points for the two threaded locking bushings on the front end of the rear strut rods being loose.

Only four cars were penalized during the actual run and four others met with mishaps that caused their withdrawal. The Maxwell was penalized for magneto trouble, while the No. 3 Mason was demerited on every one of the four days. The Apperson drew 22 points on the third day when it was necessary to break a seal to repair an oiler belt. The No. 14 White was penalized the fourth day when its oiler chain slipped off. Of the four cars that were withdrawn, the Reliable Dayton went out the first day with a broken frame. Six holes had been bored in it to permit of lamps being attached. This weakened it so that when the car hit a culvert near Kenosha the frame broke. The car ran the last day as a non-contestant. The Midland smashed a wheel the second ray turning off the road because of new gravel, but went in again as a non-contestant. On the fourth day it again met with hard luck breaking a frame.

"Beating it" was responsible for the Rainier breaking its frame, the car being withdrawn the second day, but going through the full 1,000 miles, being first home all of the four days. The last two days the car was driven by A. M. Robbins, manager of the Chicago branch, and it experienced no trouble. The Studebaker also was one of those to be withdrawn. Its first mishap occurred the first day when a pinnion gear in the differential was stripped through a broken ball. On the third day the car skidded on the wet cobbles in South Chicago and broke a wheel. It went through the entire 1,000 miles, however.

The first day's run was over a course taking in Kenosha, Janesville, and Rochelle, the distance being 262.7 miles. The second day the cars went via Aurora, Ottawa, and La Salle, 241.8 miles; the third day to Crown Point, Valparaiso, La Porte, Plymouth, South Bend, Michigan City, Hobart, and Hammond, 257 miles, and last to Rockford, Oregon and Rochelle, 230 miles.

SCORE OF THE 1,000 MILE RELIABILITY RUN OF CHICAGO MOTOR CLUB, OCTOBER 6—9, INCLUSIVE, 1908.

No.	CAR	Div.	Class	H.P.	Bore	Stroke	No. of Cyl.	Tires	Driver	1st Day	2d Day	3d Day	4th Day	Ex.	Total
8	HAYNES	1	D	36	4 3-4	5	4	Diamond	Frank Nutt	0	0	0	0	0	0
9	PREMIER	1	D	32	4 1-2	4 1-2	4	Diamond	R. McNamara	0	0	0	0	0	0
15	FRANKLIN	2	G	28	4 1-4	4	4	Goodrich	C. S. Carris	0	0	0	0	0	0
16	HAYNES	2	G	36	4 3-4	5	4	Diamond	L. Wagoner	0	0	0	0	0	0
20	PIERCE-ARROW	2	H	60	5	5 1-2	6	Goodrich	P. Hofmann	0	0	0	0	0	0
7	PIERCE-ARROW	1	D	43	4 1-2	4 3-4	6	Goodrich	Kumpf and Keller	0	0	0	0	1	1
4	MASON	2	E	20	5	5	2	Michelin	P. M. Harn	0	0	0	0	2	2
19	MARMON	2	G	50	5 3-8	5	4	Diamond	Shafer and Stillman	0	0	0	0	2	2
12	WHITE	1	G	30	3×6	4 1-2	2	Fisk	Leitch and Condon	0	0	0	0	21	21
5	APPERSON	1	C	30	4 3-8	5	4	Diamond	N. McLain	0	0	22	0	2	24
2	MAXWELL	1	B	20	5	5	2	Ajax	J. Muntwyler	24	0	0	0	27	51
14	WHITE	1	G	30	3×6	4 1-2	2	Diamond	Sheridan and Phillips	0	0	0	34	21	55
3	MASON	1	B	20	5	5	2	Hartford	F. S. Duesenberg	66	2	68	62	26	224
1	RELIABLE-DAYTON	1	A	21	5 1-8	4 1-2	2	Goodyear	C. L. Halladay	Withdrawn; non-contestant last day.					
6	MIDLAND	1	C	32	4 1-2	5 1-4	4	Diamond	Hayes and Hall	0	Withdrawn; continued as non-con				
11	RAINIER	1	D	45	5	5 1-4	4	Fisk	M. Hagelstine	0	Withdrawn; continued as non-con				
17	STUDEBAKER	2	G	27	4 1-8	5 1-4	4	Diamond	G. Smithson	Withdrawn; continued as non-con.					

DIVISION 1—RUNABOUTS.

DIVISION 2—TOURING CARS.

Class A—Selling for less than $1,000. Class B—Selling for $1,000 to $1,999. Class C—Selling for $2,000 to $2,499. Class D—Selling for $2,500 to any limit. Class E—Cars costing up to $1,999. Class F—Cars costing $2,000 to $2,499. Class G—Cars costing $2,500 to $3,999. Class H—Cars costing $4,000 and up.

NARRAGANSETT PARK AGAIN THE SCENE OF RACING

PROVIDENCE, Oct. 12.—The race meet of the Rhode Island Automobile Club on the mile circular track at Narragansett Park was marked by the most daring and exciting automobile racing that New England has seen, the smashing of the track records, and two accidents in which two drivers escaped death by a miracle. The meet was attended by upwards of 7,500 persons, and was a success from every standpoint. The several events were run with regularity, with not more than five minutes' wait between any two of them, and had it not been for the accidents, the meet might be classed as ideal.

Both accidents happened at the same place on the track, at the three-quarters mark, and both occurred within an hour. The first was when Joseph Wilcox, of Beverly, lost control of his machine when rounding the curve. The car crashed through the fence, plunged into a ditch, and overturned. Wilcox was thrown out and landed upon his back, injuring his spine. The crowd surged upon the track, and after being driven back by the police the injured man was removed to St. Joseph's Hospital, where he was placed on the list of those dangerously injured.

In the second heat of the race for gasoline cars of all horsepower, Arthur Lee, of this city, while leading in the first lap, struck an obstruction of some sort in the track while the machine was skidding around the same curve. The wheels were jammed, the car tipped forward, made a complete somersault, and pitched over into the ditch. Mr. Lee was thrown about twenty feet, and had he not struck clear of the ground upon which the machine fell, would have been crushed to death by the mass of wood and iron into which the car was speedily reduced. The summary:

STOCK STEAM CARS.

1.	Stanley	F. W. Marriott	5:28 3-5
2.	Stanley	W. R. Files	6:16 2-5
3.	Stanley	A. C. Trimble	

GASOLINE STOCK CARS, 15.1 TO 24-HORSEPOWER.

1.	Chalmers-Detroit	Oliver Light	6:48 3-5
2.	Ford	C. A. Edgecomb	7:06 2-5
3.	Ford	James Myers	

GASOLINE STOCK CARS, 40.1 TO 60-HORSEPOWER.

1.	American Locomotive	Grant	5:14 4-5
2.	Welch	L. S. Rogers	5:34
3.	Stearns	C. Stafford	

EXHIBITION MILE RACE AGAINST TIME.

1.	Flat-Cyclone	Ralph De Palma	:52 3-5

Old record, 54 seconds.

SPECIAL RACE, for Gasoline Stock Cars all Horsepower.

First Heat.

1.	American Locomotive	Grant	5:14 4-5
2.	Pope-Hartford	H. A. Capron, Jr.	5:15

Second Heat.

1.	Welch	Rogers	5:17 2-5
2.	Stearns	C. Stafford	5:23 4-5

Final Heat.

1.	American Locomotive	Grant	5:13 3-5
2.	Pope-Hartford	H. A. Capron, Jr.	5:15 1-5
3.	Welch	Rogers	

FREE-FOR-ALL.

1.	Flat-Cyclone	Ralph De Palma	4:26
2.	American Locomotive	Grant	5:16 2-5
3.	Flat	Crafford	

THE UTILITY OF AUTOMOBILE CLUTCHES

By THOS. J. FAY, E. E., President Society of Automobile Engineers.

CLUTCHES may be classified as follows: (*a*) *cone,* (*b*) disc, (*c*) band; cone clutches may, in turn, be subdivided as follows: (*a*) metal to metal, (*b*) leather faced, (*b*) cork insert; while disc type may be classed as: (*a*) leather faced, (*b*) multiple disc, (*c*) cork insert; and band clutches may be put down as of the (*a*) constricting, (*b*) spiral, or (*c*) expanding types. Clutches, of whatever type or class, have but one prime object, *i.e.,* to enable the operator to start and stop the car without having to stop the motor. There is a secondary consideration, if we take into account the fact that it is convenient to be able to slip the clutch, on occasion. Some types lend themselves to this secondary purpose with greater facility than others, and it is also true that some clutches are most easy of application, all things considered.

With clutches, the temptation is to champion some one type. This temptation is dictated, perhaps, by limited experience, for the most part. If one becomes accustomed to using one type it naturally influences his inclinations, and he ultimately arrives at a point where he is blind to the perfection of types with which he has had the least to do. It is not too much to say, that of all the types of clutches known in connection with the automobile, none are so inferior as to fail to work, if they are properly designed. On the start, then, it is proper to point out that, in service, clutches may be of any type and still be so good as to be commendable.

Few Clutches That Are Utter Failures.

Every autoist has his preference, as is amply borne out by the fact that every type of clutch mentioned is now represented on the automobile, and the volume of business is equal to the output in nearly every case. How futile it is, then, to deny to a type of clutch the place it actually holds, in spite of the fact that one would not have to go far to find a defamer who would be willing to swear that certain types are useless. If we proceed in an unbiased manner to a full investigation of clutches, with the idea of realizing correct methods of design and with the hope of shedding light upon the materials to use, not forgetting that in the manipulation of clutches something is to be gained by favoring the several types in a way consistent with their respective characteristics, the result will be of benefit to the designer, the constructor and the user.

To show the extent to which the clutch question persists in occupying the minds of designers, it will only be necessary to relate a circumstance or two. In one of the best-known cars its design and development was attended by the construction and use of some thirteen different clutches, representing all the types known to designers. All the clutches worked so well that the car might have been put on the market, with any one of them, and have made a success. The history of several of the better-known cars is largely the same. The clutch seems to have attracted the notice of the designers with more frequency than any other one essential. In some cases good clutches were superseded by others that proved to be far inferior. Of course, this condition was not tolerated any longer than the time required to make another change.

It might be said, why make changes? Again, why stick to the "ox-cart"? It is easy to see that clutches must be a bone of contention for some time to come. When the time arrives that speed changes can be made through the clutch, then will be the time to shed the sliding gear-set, and not before. Speed changes cannot be made through the clutch as a regular and continued operation now, nor will the future be likely to afford us more kindness in this respect. On the other hand, if motors ever do become as flexible as the six-cylinder advocates say they are now, all that will be required is a clutch that will stand slipping for short intervals of time, provided the slipping can take place under well-regulated conditions.

A well proportioned motor that delivers power in proportion to speed, over a considerable range of available speeds, would come very close to the point of eliminating the gear-set, without being so over big as to debar its use. This would hold good in the cases in which the aim would be utility, rather than the maximum possible speed. In other words, if the gear ratio is fixed for moderation, and the motor is provided with a little extra power, a clutch that will admit of slipping will then do the rest. But even with all the other facilities available, it would not be wise to take to the road without the gear-set unless the clutch would lend itself to the slipping operation, as there are spots in otherwise fair roads in which cars will stick and in which the power of the motor must be exerted to the maximum. A little extra flywheel would, of course, help out. This is a facility that is rarely afforded on account of the desire to reduce weight, even if it has to be taken out of the wrong place. In six-cylinder motors, the opportunity to realize nearly the gearless condition, assuming the clutch is so designed as to afford a due measure of slipping, is a good possibility, but the featherweight flywheel generally defeats the project. The most ill-behaved car the author ever had the misfortune to kill time in was otherwise so good as to be noteworthy, barring the bucking under severe conditions, in the absence of enough flywheel to complete the cycle on the "high," in which gear it was said to be big enough to go through a mud hole.

With sufficient flywheel it would be possible to eliminate gear changes to some extent, if not entirely, provided the clutch would stand the slipping. It would have to slip to any desired degree. A "fierce" clutch would never do. Nor would one of the kind that would either hold entirely, or be entirely free. There are such clutches and they serve their purpose because the gear-set enables the operator to run the motor fast or slow, independent of the car speed, so that the power of the motor always matches the road conditions. Some clutches are prone to slip, in that they have not the requisite holding power. This is due to faulty design in every case, some difference accounting for the failure on the one hand, and the success on the other.

Why Is a Clutch Called "Fierce"?

This property seems to be characteristic of some types, and is rarely found in others. Those that are prone to exhibit this fault are kept in working order, as a rule, by taking such measures as will prevent this action, such as oiling. But others that lack the fault will hold just as well as the "fierce" kind. "Fierce" clutches are usually the kind in which the engaging movement is abrupt. In other words, from the instant of contact of the shoes to the point of "full on," the travel is short and quick. Certain toggle motions have this property. In cone clutches, certain angles are known as "sticking angles" and clutches in which such angles are found will be "fierce." Some clutches have a wedge motion, and if the wedge is so designed as to apply the pressure in a short travel, and the pressure is relatively great, a "fierce" clutch will result. In certain cam motions the same phenomenon will be noticed. The process is the same, in that the pressure is great and reached a maximum very quickly. "Fierceness" is sometimes a sign that the clutch is not powerful enough for the car. The adjustment has then to be so tight that the action is just about that which would be expected of a clutch in which the principle is wrongly applied.

A disc clutch, for illustration, can become "fierce," if the spring is too strong, the discs are too few, or of a radius less than that likely to produce good results, in the absence of oil. Without oil, this type fulfills the conditions of a "fierce," conical

clutch in that the distance (or time) of travel between initial contact and final maximum pressure is small. In a disc clutch it is the oil that introduces the factor of time since the oil has to be squeezed out from between the discs before the clutch will take hold sufficiently to drive the car. The slippery surface afforded by the lubricant will stay in place for a time depending upon conditions as follows:

(*a*) The pressure between the discs.
(*b*) The mobility of the lubricant.
(*c*) The distance the lubricant has to travel to escape.
(*d*) The unctiousness of the lubricant.

If the lubricant is lacking in mobility it will hold to a constant viscosity under the changes in temperature that are wholly unavoidable in a clutch. The absence of mobility is of greater importance than viscosity at some constant temperature. Body is something to take into account, in that the lubricant can easily have body in excess of that desired with the result that the clutch would not take a hold within the desired time, if at all. Just how slippery the surface should be, in a given clutch is something to determine, and the unctiousness of the lubricant must on that account be taken into consideration in calculating this factor.

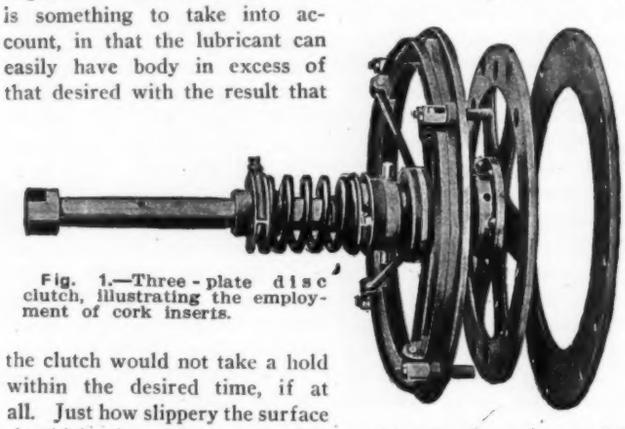


Fig. 1.—Three-plate disc clutch, illustrating the employment of cork inserts.

Clutches in which "cork inserts" are properly applied are probably as far away from the "fierce" condition as it is possible to go. Cork is a peculiar product and it performs in accordance with its peculiar characteristics. In the first instance, it has a high coefficient of friction, so that high pressure is not necessary, and its coefficient of friction is but little influenced by the question of lubrication. In other words, the cork will hold on a dry surface or if the surface is lubricated and the degree of polish of the surface is not a factor of such marked import as would be the case in the absence of the cork. High temperatures are not so prone to char cork as they would leather or fiber. This is an important matter in clutches. Even wood will be charred by the heat generated in clutches under certain conditions, which is fair evidence of the fact that the temperature can raise to a point as high as 500 degrees C.

Present Materials Not Suited to Slipping.

How futile it would be, then, to anticipate the use of leather, or fiber (compressed wood pulp), in clutches, with the idea of taking advantage of the slipping phenomenon, in the absence of change gear. Of course, cork is wood, but there is a decided difference as between wood and cork, as it is used in clutches. This will best be understood by illustrating the method of applying the cork. Fig. 1, showing a three-plate disc clutch, is a good illustration of its application; the middle disc is perforated and the perforations are filled with cork. The cork is pressed into the perforations so tightly that, in view of its elasticity, it overflows the holes and protrudes beyond the surface. As a result, the compression of the plates ends in a close contact of the cork inserts against the faces of the plates in juxtaposition, and in view of the high coefficient of friction of the cork, the negative torque of the clutch becomes a maximum.

If the pressure be great, the cork inserts compress sufficiently to become flush with the plate, but without losing the transmission value of the cork. This increase in pressure may bring the plates into metal to metal contact and if it does, the ability of the clutch will be increased. The ability of a clutch can be stated in terms of negative torque, and when the negative torque value equals the torque of the motor (positive torque) the transmission will be on a basis of 100 per cent.

In a motor the torque may be estimated as follows:

$$P = \frac{2\pi \quad RS}{33{,}000}$$ In which:

$P =$ pull in pounds (average).
$\pi =$ 3.1416
$R =$ radius of the lever arm.
$S =$ angular velocity of the crankshaft (r.p.m.).

In a clutch, the negative torque may be estimated in the same way, taking into account the fact that a reserve factor is valuable, in order that the ability of the clutch will be well beyond the slipping point, when the motor is delivering its maximum power. If the negative torque of the clutch barely equals the torque of the motor, slipping will ensue for reasons as follows:

(*a*) Flywheel effect adds momentarily to the torque of the motor.
(*b*) The inertia component puts work on the clutch, under certain conditions.
(*c*) The condition of the clutch will not remain constant.

The best probable ability of the clutch might be regarded as that which would register a negative torque equal to about twice the average torque of the motor. This difference would be enough to insure the holding ability of the clutch, under all road conditions.

Design Must Depend on Other Features.

Let us take up one other phase of this subject, the question of the ability of clutches in the abstract, taking for illustration a clutch of say 20-horsepower at 1,000 r.p.m. It might appear at first sight as if this clutch would do for any 20-horsepower motor. But a motor can deliver 20-horsepower under several conditions of torque. In other words, the torque of all 20-horsepower motors would not be the same. The clutch, then, should be compared on a basis of torque and not of horsepower. If it is true that the negative torque of a clutch should be in excess of the torque of the motor, by an amount equal to 100 per cent., the formula would be as follows:

$$P' = \frac{2\pi \quad RS}{33{,}000 \times Q}$$ In which:

$P' =$ negative torque of the clutch.
$\pi = 3.1416$;
$R =$ mean radius of the clutch bearing surfaces.
$S =$ angular velocity of the clutch members;
$Q = 0.50$.

P′ is the actual pull, and the coefficient of friction must be taken into acount in the process of determining the necessary pressure of the clutch spring. If the pressure is not directly applied, the angularity and the lever advantage must be allowed for. In a single pair of discs, pressed together by a spring, the pressure may be regarded as direct. In this case, if cork inserts are used, the spring pressure would have to be three times the value of P', on the ground that the coefficient would be about 0.33. To reduce the spring pressure, it would be necessary to do one of two things, *i.e.*, (*a*), increase the mean radius of the members, or (*b*), increase the number of discs. Theoretically, the spring pressure would decrease directly as the discs increase, or inversely as the number of effective discs. Discs, to be effective, must be prevented from rotating.

Considering the Multiple Disc Type.

The number of discs must be limited, else the pressure between the respective surfaces would fall below the point of pressing the oil out from between them, on a basis of the reasoning as above set forth. On the other hand, the number of discs might be so great as to produce a clutching effect, due to the resistance of the lubricant used. The capillary attraction of all

lubricants is so great that the section of the lubricant is *sheared*, before the clinging effect of the lubricant is overcome. On this account, it is possible to so design a clutch using a large number of discs, that the work required to shear the numerous sections of the entrapped oil, will equal the ability of the motor, plus a reasonable reserve. In this scheme it would not be the idea to have the discs come into contact with each other at all. The slippery surface, due to the oil, would always interpose, and the oil would be the only part this would be consumed, and is all that would have to be replaced.

Some clutches of the multiple disc variety come so near to this ideal that it is necessary to select oil of a character almost devoid of unctuousness, and of almost no body. Mixtures of light mineral oil and kerosene are sometimes used for such purposes. Centrifugal force plays a part in the clutch if the radii of the members is sufficient to render this force potent. The oil is thus cast off and the members are then free to contact with eacn other. The phenomena termed drag is present in clutches of this character and it increases in direct proportion to the number of films of oil. This is explained in the same way that it is possible to show that a clutch can be so constructed that it is the shearing of the oil that affords the resistance necessary to set up the negative torque.

The drag is reduced if the discs are parted very much, for then the shearing moment is eliminated and molecular resistance is all there is to be overcome, again illustrating the effect of different grades of oil. While drag is a characteristic of clutches of the multiple disc genera, they are not valueless on that account, since drag can be the lesser of two evils. In the cone clutch the inertia of the mass is a detriment; the mass itself is not so great, but its radius is usually excessive. Cone clutches are from 15 inches to 18 inches in diameter and even aluminum weighs enough to be felt. It must be remembered, moreover, that the aluminum is covered with leather and the actual weight of the clutch rim is sufficient to set up a flywheel effect. This is most noticeable when the sliding gears are collided with each other. If the clutch rim is not carefully whittled down, to eliminate all possible weight, the sliding gears will soon show the effect of it.

In multiple disc clutches the radii are less, in view of the fact that the discs are about one-half the diameter of the rim of a cone clutch of the same ability. If we take into account the fact that the inertia of the mass is proportioned to V^2W (the square of the velocity multiplied by the weight), it is easy enough to see that diameter plays an important part, especially since the velocity is as follows:

$V = 2\pi Rs$ in which,
V = speed of the mass in feet per second,
$\pi = 3.1416$,
R = radius of the mass in feet (from the axis of rotation),
s = angular velocity in feet per second.

From the formula it would appear as if whittling the rim down to the smallest possible section is not nearly so good as reducing the radius as much as possible. The effect of mass is in direct proportion, while the effect of speed is as the square.

Can Slipping Be Taken Advantage of?

As clutches are at present designed, the question is, can slipping be tolerated? or, can clutches be slipped to control the speed of a car? It is believed not. The average clutch has very little of the character of the average braking system and when it comes to brakes they do not last so long that it is desirable to wear them out sooner than they will naturally need replacement. In other words, it seems quite out of the question to consider the clutches of to-day as suitable for the double purpose of clutching and speed controlling, by way of slipping the clutch at will. It is not uncommon to hear autoists talking of the multiple disc clutch as one that undergoes little or no deterioration as a result of continuous slipping under variations of load.

They seem to think that the large surface exposed, especially in view of the fact that the discs are submerged in oil, will prevent damage if the clutch is caused to slip. They forget that the discs are thin, and also that they are loose on the splines, keys, or feathers that prevent the discs from rotating. No member keyed onto a shaft will stand much abuse. This is especially so, if the member has but little bearing surface on the key. Even a considerable number of such members working in unison will fail to stand up under the work because the joint is not firm. Lost motion is bound to result in more lost motion in a short while, and in a multiple disc clutch the discs soon fray out and interfere with each other and the clutching functions, within a space of time so short as to surprise even those most experienced in the use of this type.

Tempered saw-blade steel, of some thickness, will stand quite some work of the kind in question, especially if the radius of the bore of the discs so made is considerable. If, however, the saw-blades are only one-half of the total number of discs, and the relating members are of bronze, it is not impoossible to anticipate which of the two links in the chain, as it were, will show distress, first and soon. One of the best clutches the author knows about is of the multiple disc type, in which all the discs are tempered saw-blade steel, and so designed that the pressure on the driving faces is very low indeed. This clutch runs in oil and the metal probably does not come together to the entire exclusion of all the oil, when the clutch holds and drives the car. This clutch will come near affording the speed regulating advantage, but it will give out sooner if it is caused to slip, than it will if it is confined to its legitimate function, and the difference in its life will be very great.

Slipping Cannot Be Tolerated.

Some designers are of the opinion that clutches, as now made, will stand any amount of slipping, and they will go so far as to point to their products as examples. The main trouble with some of these wonderful clutches is that they slip when they should hold, and they are also "fierce." In these clutches, "fierceness" is bound to follow adjustment, and as a result of the buffs that "fierce" clutches are heir to, the time they will stay adjusted is the time it takes to negotiate a fairly long hill of some grade pretensions. When it comes to the multiplication of driving faces difficulty is encountered in having all the faces bear equally. A dividing head on a milling machine is about the most exact device possible to use and the dividing head is not so exact as to assure equality of pressure. Even assuming that a dividing head would afford practical equality of spacing there is the cutter problem to master.

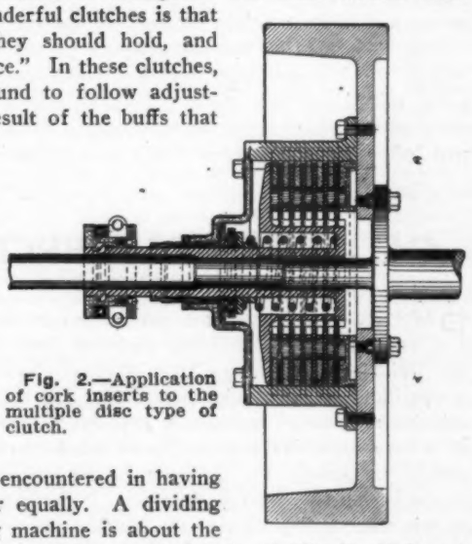


Fig. 2.—Application of cork inserts to the multiple disc type of clutch.

A comparatively small number of cork insert discs of sufficient thickness would assure immunity from key-way trouble. With a liberal section there would be little room for increasing the number, but the cork would make up for the smaller number of discs. Fig. 2 is a cross section and plan of just such a clutch and if change gears are provided to take the main work, then this type of clutch (Fig. 2) would be of excellent advantage in a pinch. There are those who think they can keep to the high gear under all and diverse circumstances. They can, to a large extent, if the clutch performance is considerably better than it is on cars that are not noted for their low first cost.

(To be continued.)

SPECIFICATIONS OF THE A. L. A. M. STANDARD SPARK PLUG

LIKE the A. L. A. M. standard screws, the standard spark plug has now been adopted by nearly all of the members of the Association of Licensed Automobile Manufacturers. The Mechanical Branch has spent much time in determining the features which it seemed advisable to standardize and in fixing dimensions. The spark plug, which has been known for several years as the "Autocar," can be described in a few words as having a ⅞-inch diameter, 18 pitch, straight thread, the form or profile of the thread being the so-called United States standard; that is, having flat top and bottom of a width of ⅛ of the pitch. This was the extent of the standard, and was really nothing more than a standard for a hole in a gas engine cylinder head. There was considerable opposition to standardizing any more than this of the spark plug. But as time went on it became clear that certain other elements of the spark plug should be defined. At first the Mechanical Branch signified its ideas in the matter by stating certain features or dimensions to be "preferred construction." However, it was some time ago decided to standardize certain further features and dimensions, still leaving other such matters as preferred construction.

The diameter of the thread, ⅞-inch, was considered necessary in order to leave the spark plug manufacturers plenty of room for insulating material in the plug. The straight thread, in combination with a shoulder or flange which seats upon a gasket close to the cylinder, always gives a gas-tight joint when the plug is screwed into the cylinder the same distance comparatively. In this connection the pitch of the standard, 18, is proper. It will be recalled that the pitch of the ⅞-inch diameter A. L. A. M. standard screw is 14, but there, another function, namely, holding power, and not a gas-tight joint, is the desideratum.

The stock used in the manufacture of the plug is 1 1-8-inch round; the hexagon head having a short diameter of 7-8 inch, being milled on this stock. This is distinguished from the construction where large hexagon-shaped stock is taken, and the part below the head turned down to a cylindrical surface. The shoulder, which is intended to seat upon a copper-asbestos type of gasket, has the same diameter as the round stock from which the plug is made, and is 1-8-inch thick or deep, having a face seating upon the gasket 1-8-inch wide.

The blank, or portion below the shoulder or flange, has a minimum length of 1-2-inch. The dimensions of this portion of the plug cannot be standardized owing to the requirements of the different types of engines, as water-cooled and air-cooled, and those having different thickness of water jacket, etc. There was considerable sentiment against even stipulating a minimum dimension for this blank on account of the tendency of any specific dimension to become standard, although intended only as a minimum or maximum. However, it was finally decided that it would be necessary in this case to specify a minimum dimension, in order to insure that in any case the blank would have a sufficent number of threads.

The question of whether the spark plug should have a recess adjacent to the shoulder was a subject of sustained debate. In this connection, previous current practice had material weight, as omitting the recess contemplated counter-boring the cylinder, whereas many thousands of engines which had been in use for some time were not counter-bored. In determining the diameter of the packing-gland nut head, that is, the separable portion of the plug which holds the insulation in place, one determining factor was that the distance across the corners of this smaller hexagon should be less than the distance across the flats of the larger hexagon, in order to make possible removing the plug from the engine with a socket wrench.

From the above it will be seen that all the essential features for a standard spark plug have been settled upon. At the same time ample leeway has been left in the matter of details to leave play for that competition which is characteristic in the business of the members of the Association of Licensed Automobile Manufacturers, and to leave the gates open for joint active inventive genius which is constantly perfecting such details.

CALL FOR COMMERCIAL VEHICLES IN THE FRENCH CAPITAL

PARIS, Oct. 3.—There are possibilities of an almost complete revolution in the building trades of Paris by the decision of the Builders, Contractors and Masons' Association to hold a competition for mechanical substitutes for three types of horse vehicles at present extensively employed. During the building of a very extensive subway, motor trucks have been employed almost exclusively for the removal of earth from the mouth of the boring to barges in the river. It is doubtless as the result of this successful work that the builders have decided to encourage the development of mechanical vehicles for the transport of large blocks of stone and for building material in general.

The first of the three types for which a mechanical substitute is requested is a two-wheeled, low-built wagon fitted with a bogey operated by a windlass, and used exclusively for carrying blocks of chisseled stone as used for foundations, facings, etc. The mechanically operated vehicle must be able to carry a load of five tons, must have metal-shod wheels, easy means of loading and unloading, an engine-driven windlass to help it out of difficult ground and a speed of not less than six miles an hour.

The second type is a long-bodied two-wheeled cart, enclosed at the sides, but open front and back, for the carrying of planks, scaffolding, ladders, and other cumbersome material. Its load capacity must be four tons, and its speed six miles.

The third type has a substitute already found in the tip wagons now extensively employed by large contractors. The regulations stipulate a vehicle capable of carrying five to six ton loads of sand, gravel, earth, etc., and of tipping them either at the rear or the side.

A ten hours' test under normal working conditions will be held for each of the three types, during which a minimum speed of six miles an hour must be maintained. It is stipulated that the motor trucks must accomplish all that the present horse vehicles perform, but full liberty is also left to designers to introduce improvements in the handling of loads. Rubber tires are barred, on account of the rough ground on which the vehicles will generally have to operate. An efficient winch, driven off the motor, is considered essential in order that there may be no difficulty in getting the vehicles out of the rough ground of building yards. The Builder's association guarantees to purchase the most successful vehicles taking part in the competition. The importance of the field thus thrown open to mechanical transport can be appreciated by the fact that the amount of material transported annually by the Paris building trade is estimated at not less than five million tons.

It is proposed that the 1909 Prince Henry touring competition shall be under the auspices of the German, Imperial, Bavarian, Austrian, and Hungarian automobile clubs, and that the event shall extend over six days. The projected route is from Berlin to Breslau, Brunn, Budapest, Vienna, Salzburg, and Munich, where the contest will end.

LETTERS INTERESTING AND INSTRUCTIVE

POINTS CONCERNING THE LAWS OF PHYSICS.

Editor THE AUTOMOBILE:

[1,583.]—Can modern automobile designers reverse the laws of physics to suit their passing whims? This question may seem absurd on the face of it, but my reason for asking it is because I notice in the specifications of the Chalmers-Detroit "30" and the new Columbia 30-horsepower model both have exhaust valves considerably smaller than the intake valves. This seems to me to be contrary to common sense, because the very cause for the engine's operating is the increase in volume of the gas after it is drawn into the cylinder. As no engine expands the gas down to atmospheric pressure or cools it to its original temperature, it is evident that there is more gas, by volume, to be exhausted than was drawn in. As this is the case, how can an engine with exhaust valves smaller than the intake work to best efficiency, especially at high speeds? If the intake valves were of the automatic variety, this combination of large intake and small exhaust is all right, because an automatic intake is more or less of a throttle, thereby cutting down the supply of gas; but on both the engines above mentioned the intakes are mechanically operated, hence none of the throttling. I do not mean to infer that I think the intakes too large, but that the exhausts are too small. This question of valve size may be a question for the designers to answer, but if you can I wish you would explain why they use intakes larger than exhausts.

Hoping that the designers of the above-named cars will see their way to explain this detail through these columns, I remain,

Worcester, Mass. FRED B. FAY.

In jumping to the conclusion that the designers in question have reversed a law of physics, you have apparently overlooked one of them yourself. The cylinder contains many more volumes at the end of the explosion than at the beginning due to the fact that the gas is under *far greater pressure;* hence, it escapes far more quickly. This is further aided by the fact that the lift of the exhaust valve is greater than that of the inlet in the two cars you mention, and this adds greatly to the effective opening of the valve port. The inlet valve is always made as large as possible in order to inspire the maximum charge, owing to the slight impelling force set up by the suction, and also to overcome the phenomenon known as "wire-drawing" at the higher speeds. But as its diameter is increased, the lift of the valve is decreased correspondingly. It is not merely a question of handling two volumes of widely differing proportions, but also one of the manner in which they are moved.

STEERING CONNECTIONS—DIFFERENT PLACING.

Editor THE AUTOMOBILE:

[1,584.]—Please tell me through "Letters Interesting and Instructive" why the connecting arms of automobile steering knuckles are bent toward each other when connected behind the axle and vice versa when connected in front?

Seattle, Wash. STEERING KNUCKLE.

The theoretical requirements of a perfect steering gear are that all wheel axles, when produced, *i.e.*, extended on the drawing board, should meet in a single point, but this is not carried out in practice. The rule now followed was introduced by one of the pioneer French designers, and consists of giving the steering knuckle arms such an inclination that when produced, they will meet at a point representing the center of the rear axle of the vehicle. It will be evident that in order to comply with this requirement, the steering knuckle arms, when placed forward, would have to represent a continuation of the lines passing through their centers when placed behind the axle. The reason for favoring a forward placing of the cross connecting rod of the steering gear, is that it is then under tension for most road shocks, beside giving a somewhat better action of the wheels where side slipping is concerned, and offering a slightly greater angular range than when in the rear. The chief reasons for placing it in the latter position are the improved appearance and greater protection thus gained, an increased angular range being obtained by narrowing the frame forward.

WANTS INTERNATIONAL BUGGY DESCRIBED.

Editor THE AUTOMOBILE:

[1,585.]—I am a subscriber to "The Automobile" and I see that many automobile manufacturers are giving detailed reports on their machines in your magazine, showing all points about their machines. I own an International high wheel auto-buggy, and have been eagerly searching for a good write-up and explanation of the International, but have looked in vain. I write to ask you to approach the good people of the International Harvister Company of America, to give the public a good, explicit, and thorough explanation of the auto-buggy, as I believe that all owners of International auto-buggies, and others, would appreciate and read with interest such an explanation, for the reason that I believe most of such owners are amateurs, and it would be a good lesson for us. Get after the manufacturers, and have them come out in daylight and tell us what they know about their product.

Buffalo Lake, Minn. MRS. F. G. NELLERMOE.

Such an appeal, particularly when coming from an owner and driver of the fair sex, should certainly bring the desired result at a very early date, and we would accordingly refer it to the manufacturers of the International. If they will supply the necessary information, it will be given due attention in the near future. There are probably a great many other amateur owners, and not all of them owners of the high-wheel buggy type of automobile who would be pleased to learn a great deal more about the machines they own, so that makers and publicity men might take the hint and depart slightly from stereotyped descriptions.

A MONTANA MAN HAS HIS SAY.

Editor THE AUTOMOBILE:

[1,586.]—Referring to "Letters Interesting and Instructive," Nos. 1534 and 1553. In the former a typographical error would seem to have crept in, as you state "coefficient is not as high as when two similar metals are used," when the rest of the article would show that you had intended dissimilar. In No. 1553, Mr. Rhodes takes you to task on your answer to "Brakes." My idea of "Letters Interesting and Instructive" is a source of aiding those who want to know, and not a means of pulling and splitting hairs. Am I right? It would seem to me that your statement as to the "why" of using dissimilar metals for brakes is concise, and I know it to be correct. The reason for using Babbitt and other white alloys is that they heat less, despite the fact that their coefficients of friction are to all intents and purposes the same as the harder metals, and that they lend themselves more readily to the inequalities of the driven or driving shafts.

Mr. Rhodes states that the sole reason for using different or dissimilar metals is that they would wear too fast; this is not the sole reason, with due respect to Mr. Rhodes. Friction is greatest with soft and least with harder metals; bronze is employed because it is softer than steel or cast-iron, and is still very tough; steel against steel would heat too rapidly and still would not give the required friction, except with greatly increased pressure over steel and bronze. As to the two files, this only illustrates the relative positions of the fibres of the metals under consideration. It will be seen that two like metals will wear in the fibre evenly and the grains come to an amicable understanding, thus giving no resistance, while two dissimilar metals will always be wearing in this respect, thus producing friction.

No. 1537. Possibly the fault is to be found in the method of driving. I have noticed that the average driver does not control sufficiently by spark advance and retard. If the escape screw on the carbureter is regulated to feed an average amount of gasoline, then by leaving the throttle down to the last notch on the ratchet and controlling by spark, the driver will find not only perfect control, but a very material decrease in fuel consumption. This does not mean that the throttle is not to be used at all, but on the contrary, that where the driving is being done on the nearly level stretches the throttle is to be closed, except for the amount provided by the escape screw. In teaching to run, this seems to be the most difficult point to impress upon the minds of those learning, that "except in speeding and hill climbing, close the throttle to the last notch and accelerate entirely by means of the sparker; when more power is needed, leave the spark advanced and use a little more gasoline." Drivers of two-cylinder cars will soon find the advantage, and those of four and six-cylinder in direct ratio to the number of cylinders employed. They will also find that this method will put them close to the five-mile limit on high, as the advanced spark will give the required time for complete combustion in the cylinder chamber, thus utilizing all the gasoline energy

of a weak mixture. Would like to hear from a few who try this for the first time, as their experience should be interesting.

No. 1547, Ideal Car. May I take exception to three of the points? First, water cooling is not ideal, by reason of the fact that it necessitates the loading of the machine with dead weight in the way of the water carried. Would advise Mr. Lloyd to look into the Franklin, Cameron, and other air-cooled cars. Second, two flexible joints are not necessary; one is all that is required, as in the Rambler. Flexible joints use considerable power. Third, the wheel base of 124 inches is excessive. How would one get around some of the sharp curves to be found on many of the roads in the country? This long wheelbase would make rapid work in cities very difficult, if not altogether impossible.

No. 1549. Mr. Evarts has mixed his dates a little. In railway and other grading the per cent. of grade is figured from the feet of rise, in each 100 feet on the level or horizontally by the engineers, though they may, of course, go it backwards, as has Mr. Evarts. Per cent. of grade is equivalent to the number of feet of rise in each 100 feet of the horizontal; thus 1 per cent. is a rise of 1 foot in 100 feet on the level; 10 per cent. is 10 feet rise; therefore, 100 per cent. would be 100 feet, and if he will take the trouble to draw the triangle he will find that this resultant is 45 degrees and not 100 per cent. of 90 degress, which comes to infinity, as you state. Hope that pie did not hurt the rest of the party.

It looks good to see at least one automobile manufacturer come down and be friends with the trade. Thank you, Mr. Duryea. Guess this will be enough for one week from

Butte, Mont. MONTANA.

A VALUABLE SUGGESTION FOR CLEANING.

Editor THE AUTOMOBILE:

[1,587.]—If you think the following suggestion would be of enough interest to your many readers to publish it, you are at liberty to do so. In 1900 I purchased my first automobile, since which time I have owned from one to three machines at a time. At the present I am the owner of two, a runabout and touring car. Yes, I have employed chauffeurs at different times, to my personal expense and regret, but for the past two years I have used my handy man about my country home for the care of my machine, such as washing, cleaning the brass, and keeping them in good shape, with instructions at the same time to clean the grease from the engine, but this latter part, for some reason, is usually neglected, and from time to time I find it necessary to roll up my sleeves and with the aid of my handy man, give my engine and other working parts a thorough cleaning.

Only a few days since in going over and cleaning the grease from the engine, shafts, and other parts, I commenced with a can of gasoline and a paint brush, and after more than an hour's hard work I managed to remove a good portion of the accumulated grease and dirt, and after another hour's hard rubbing with waste, rags, etc., I succeeded in doing a job which would pass inspection, but after finishing I noticed there were certain parts of the engine and under parts of the differential gears and places which were hard to get at, had not been properly cleaned, largely on account of their inaccessibility. Just at that stage of the cleaning process I happened to notice a brass hand torch, or so-called plumber's gas furnace, such as is used for heating solder irons and found in most garages, and right here is the point of my suggestion. I pumped it up to give as much pressure as I could by hand, opened the valve and found I had a good strong pressure, and was surprised to see how rapidly and thoroughly it removed all the grease from parts which I could not get at otherwise, such as bolt heads, small screws, and other parts which were impossible to reach by hand.

The thought occurred to me, if some inventive genius could get up a suitable spray used in connection with a compressed air tank suitably arranged with connections and a tube, that it would be a quick and easy way to clean grease and dirt from the engine. Everybody knows the process of whitewashing and painting by spraying, also the familiar process of sand-blasting for cleaning the fronts of buildings, and the thought occurred to me, if something could be invented to use as a spray with gasolene, that it would be a boon to automobile owners as well as chauffeurs, as the cleaning of an engine could be accomplished in not only a quarter of the time, but in a more satisfactory manner. If you think the suggestion practical and any inventive genius cares to take advantage of it, he is welcome to it. THOS. C. SNEDEKER.

New York City.

WHAT ONE MAKER'S TRUCK DEMONSTRATES.

Editor THE AUTOMOBILE:

[1,588.]—You might be interested to know of an experience with one of our three-ton trucks last week. This machine is hauling lumber twenty-two miles, from Tully to the Solvay Process Co., Syracuse. The machine is making one round trip a day, or about forty-four miles, and is hauling from four to five tons of lumber. The total load of approximately 15,000 pounds is so much greater than the roads are accustomed to that the towns have been obliged to replank the bridges along the way, one after another, because of the danger of the truck breaking through. Last week, while coming out of the Solvay property at Tully, with a five-ton load of plank, it was necessary to cross a wooden bridge which spanned a narrow ditch. When the rear wheels struck the bridge, the driver felt something go, and the bridge and machine settled gently on one side and the truck and load turned completely bottom side up in the ditch. The truck was released from its load, and in some way was righted. We give our driver credit for a pretty clever piece of work in getting this machine on its legs again without a particle of equipment of any description to assist him.

Examination showed that only about one gallon of gasoline remained in the tanks. Because the car being completely turned over, the gasoline had escaped through the vent holes in the top of the tanks. As far as the driver could discover, the machine looked all right, and, on trying the engine, everything appeared O. K., and so he put his five-ton load on again and started for Syracuse. After a short distance his gasoline gave out, and he was hung up for two or three hours until a passing machine loaned him fuel enough to bring him to the city. The truck finished its trip as usual, and, so far as we can discover, there was not the slightest damage sustained by the machine in its upset.

We think that this is a most remarkable demonstration of the flexibility of the wood-sill construction of the Chase truck, as we do not believe any steel frame could have withstood the enormous twisting action caused by the rear end of the truck tipping over and pulling the front with it. As compared with the horse, we think that a mix-up of this kind would have resulted in about as spectacular a runaway as could have been desired.

Syracuse, N. Y. CHASE MOTOR TRUCK CO.,
S. M. CHASE, Pres.

BRITISH MANUFACTURERS AND MOTOR RACING.

Editor THE AUTOMOBILE:

[1,589.]—The views which have been expressed with regard to dangerous motor racing have interested and impressed me greatly.

There can be no doubt that the rapid development of the automobile has in the past been very largely due to racing, and the public undoubtdly then took a great interest in it; but recent utterances have devloped the fact that there is now an immense volume of public feeling against dangerous racing, and that there is a general idea that the automobile is developed and established so sufficiently that racing demonstrations of an extreme type are no longer necessary.

As one who has been responsible for most of the racing in the British Isles, I think it may perhaps be my duty in deference to public feeling to be the first manufacturer to publicly announce my intention of withdrawing Napier cars from all dangerous competitions.

In making this announcement I hope the public will accept my assurance that my sole object in automobile racing in the past was to demonstrate the ability of a British manufacturer to hold his own in this high type of engineering against any one in this world, notwithstanding the long start our faulty legislation gave our foreign competitors in this great industry. I feel that that object has now been achieved, and that the British motor-car now leads in type, design, and workmanship.

This matter is a serious one for the manufacturer; and it is possible that abstention from racing contests may, as some think, react upon my firm. I must therefore qualify this declaration of my withdrawal from abnormal contests by claiming liberty to lead the way again if I have mistaken the trend of public feeling.

London, England. S. F. EDGE.

WHAT IS NORMAL COMPRESSION?

Editor THE AUTOMOBILE:

[1,590.]—In the September 10 issue under the head of "Suggestions for the Man Who Drives His Car," by Thos. J. Fay, he uses the expression: "Compression is normal." How do you determine this and by what instruments?

Kingman, Kas. GEO. C. TREDICK.

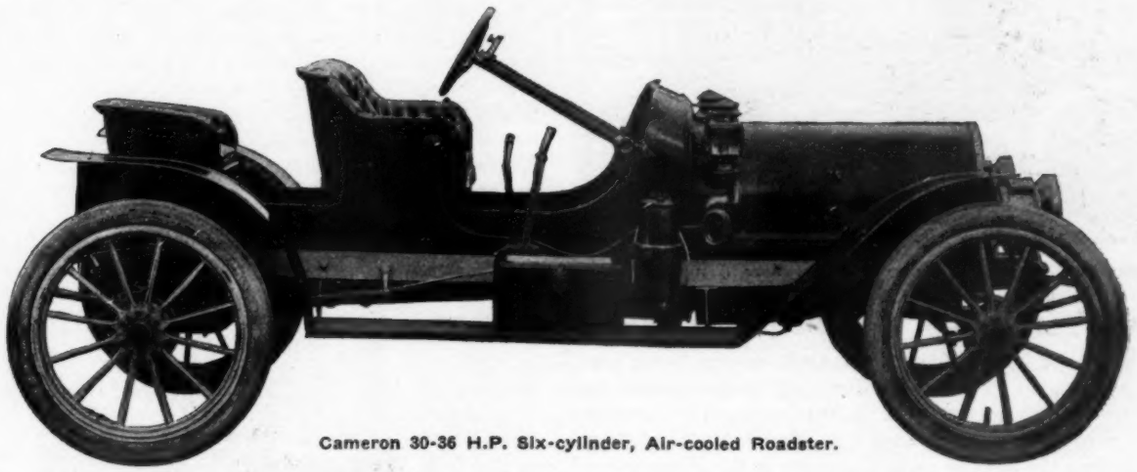
Normal compression in any given design of motor would be the compression (cold) fixed by the designer by the relation of the sweep of the piston to the clearance space. Normal compression is not the same, as measured in pounds per square inch, in all motors. The normal compression as against "loss of compression" would be evident to a motorist in the act of cranking. Were the compression to become abnormal, as a result of carbon deposit, it would be rendered manifest by knocking on a gradient or by way of pre-ignition.

The cold compression can be found by means of a "gauge" reading to about 90 pounds per square inch. Screw the gauge into the threaded hole, normally used for the spark plug. Another way is to use a spring balance, hooked to the starting crank, and by a steady up pull, against the compression, the pull in pounds resultant of the compression may be noted.

THOS. J. FAY.

Brooklyn, N. Y.

CAMERON AIR COOLERS IN 4- AND 6-CYLINDER MODELS

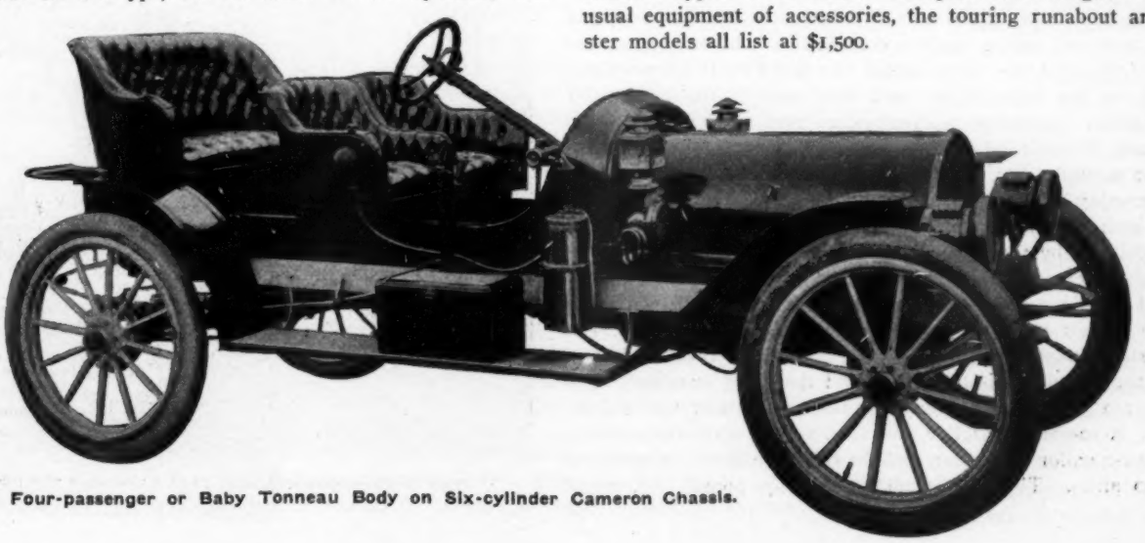


Cameron 30-36 H.P. Six-cylinder, Air-cooled Roadster.

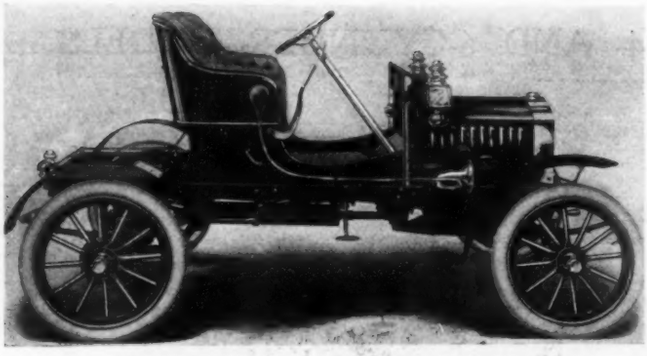
FOR the coming season the chief representative of the Cameron air-cooled line of cars, made by the Cameron Car Company, Beverly, Mass., will be a machine of the six-cylinder type, which will be placed on the market at $1,500. As a matter of fact, this new Cameron, which is known as Model 11, is already on the market. The motor is of the well-known air-cooled type that this concern has been turning out for the past six years, and has undergone practically no changes in the 1909 model, with the exception of improvements here and there that are the result of experience. The six-cylinders are cast independently, the valves being placed opposite each other in the head, thus obtaining all the advantages of a direct placing in the head, and at the same time making a smooth chamber inside the cylinder, with the added benefit of permitting the cool air coming through the inlet to keep down the temperature of the exhaust, this valve arrangement being responsible for the great fuel economy of the Cameron motor.

The crankshaft is a one-piece drop-forging supported on four ample-sized bearings of Parsons' white bronze, the big end bearings of the connecting rod also being of the same metal, the bearings themselves being die cast. Both cylinders and pistons are cast from very hard, fine-grained gray iron, and this is also true of the piston rings. The wrist pins are unusually large and are ground to a perfect fit. The cylinder dimensions are 3 7-8-inch bore by 3 1-2-inch stroke, and the motor develops its rating of 30-36 horsepower at a moderate normal speed. A dual system of ignition is fitted, employing the Remey high-tension magneto, which is included in the list price. The clutch is of the internal conical type, self-contained in the flywheel, thus doing away with all end thrust. Drive is by means of a propeller shaft through a single universal joint to a unique type of selectively operated sliding gear-set giving three speeds and reverse. This is a special design of transmission that has been developed by the builders of the Cameron cars and is one of the strong features of their machines. It is built integral with the rear axle, the pinions and shafts being made from high-grade chrome nickel steel, supported on imported annular ball-bearings. The latter are also employed on both the front and rear wheels and in the rear axle driving unit, the only plain bearings being in the motor. The forward axle is a piece of seamless steel tubing, the knuckles, steering arms and connections all being substantial drop-forgings; the driving axle is of the floating type, the entire load being carried by the housing tube, while the driving shafts are of chrome nickel steel.

Two sets of brakes are combined in the same drum, mounted on the driving wheels, the service brake consisting of a thermoid-lined band contracting on the drum, while the faces of the emergency brake are malleable iron against steel, the former constituting the shoe, which expands against the inner face of the steel drum. Full elliptic springs are used on the rear and three-quarter elliptics on the front, making the car very easy riding for its weight, which is but 1,650 pounds in the touring type. The steering gear is of the enclosed rack and pinion type. Wheelbase is 112 inches and the tread is standard, but the 60-inch southern tread will be provided on order. Tire equipment is 32 by 3 1-2 inch all round on all models. The touring car is capable of 50 miles an hour, and the runabout and roadster types of 60 miles. Complete with magneto and the usual equipment of accessories, the touring runabout and roadster models all list at $1,500.



Four-passenger or Baby Tonneau Body on Six-cylinder Cameron Chassis.

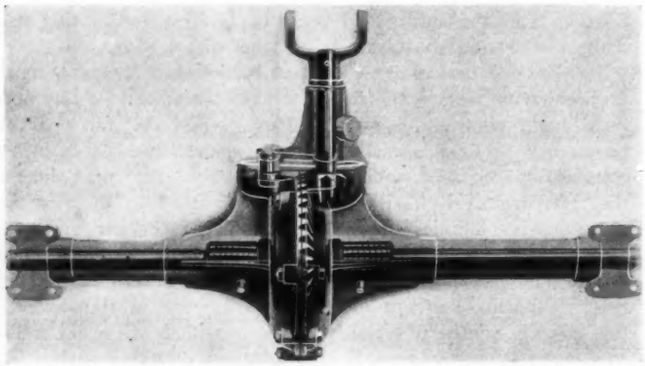


Maxwell Model A, 10-Horsepower Junior Runabout.

MAXWELL JUNIOR RUNABOUT FOR 1909.

As a leader for its 1909 line, the Maxwell-Briscoe Motor Company is planning to build no less than 5,000 10-horsepower runabouts, which will be marketed at $500 each. The foregoing illustration of this new car, known as Model A, shows that it closely follows the lines of its predecessors in the Maxwell fold, and a review of its specifications makes this even more apparent. As a matter of fact, it is practically a replica of the 12-horsepower Maxwell that has been on the market for several years past and which lists at $825, the chief difference between the two cars lying in their size. The two-cylinder motor is of the horizontal opposed type, and its cylinder dimensions are 4 by 4 inches, its rating of 10-horsepower being delivered at 1,500 r.p.m. The valves are mechanically operated and the cams and camshaft, contained in a separate housing, are removable without disturbing the timing. The entire motor is protected by a sheet metal pan extending from the radiator to the dash.

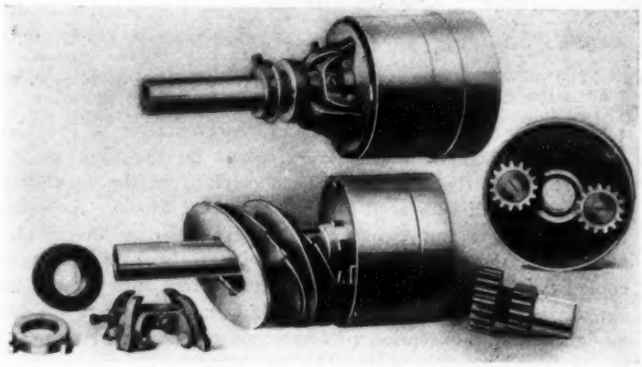
The carbureter is of the standard Maxwell, float-feed type,



A View of the Maxwell's Rear Axle and Connections.

while ignition will be of the high-tension order, employing a double unit coil on the dash; a compression oiler located on the forward face of the dash under the hood, with three sight-glasses on the dash proper, will take care of the lubrication. For cooling, the thermo-syphon system used on the other Maxwell cars, is employed, with a honeycomb radiator. The same type of multiple disc clutch is also used, the gear-set being of the planetary type and providing two forward speeds and reverse, both the clutch and the gear-set running in a bath of oil. Final drive is by shaft to a live rear axle, there being two universals between the gear-set and bevel gear. The frame is of pressed steel, hot-riveted, while the running gear will consist of 28-inch wheels with 3-inch tires of the clincher pattern. The suspension consists of full elliptic springs, both front and rear, while the wheelbase is 82 inches, and the tread standard. The brakes are placed on the driving wheel hubs and are double-acting. A 10-gallon gasoline tank is provided, while the radiator holds 2 1-2 gallons of water, and the oiler one quart, or sufficient for 100 miles. The weight, all on, is 1,100 pounds. A metal body of the runabout type with a divided seat and an open deck in the rear provides accommodation for two.

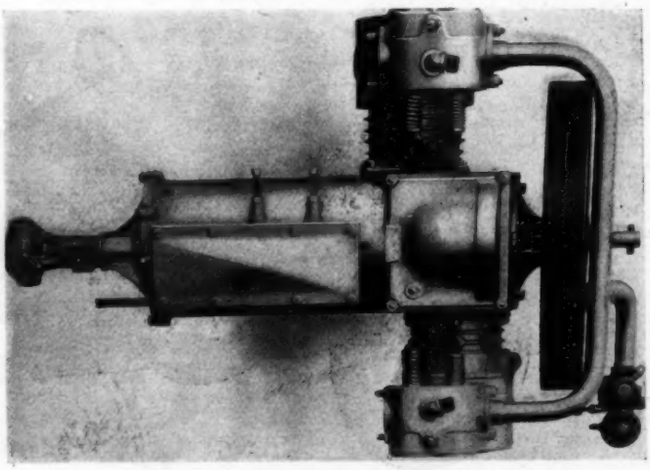
In its preliminary announcement concerning the newcomer, the Maxwell-Briscoe Motor Company makes a very interesting comparison between the initial cost and the expense of maintaining a horse and buggy as compared with running a Maxwell Junior runabout for a year, conceding, of course, that any automobile would be used so little that its total mileage for a year would be but 1,000 miles, which is said to represent the average travel of the individually owned horse rig in this country. Rather a significant fact in this connection is the citation from the government statistics of the figures covering American carriage production, which show that very close to 1,000,000 carriages of all kinds are turned out by American makers annually. Of these, 770,000 in round numbers are of the one-horse buggy type, which may best be compared in first cost and expense with an automobile of the size of the Maxwell Junior. Figuring de-



Showing the Planetary Transmission Assembly.

preciation and interest at the same rate in each instance and charging the usual prices for supplies and repairs in the case of both the horse and wagon and the automobile, it is calculated that it costs the average horse owner $375 to cover 1,000 miles in the course of a year, at an average speed of eight miles an hour, which is high, as the usual horse-drawn vehicle seldom averages better than six miles an hour, even for comparatively short distances, while on a long run this would naturally be less.

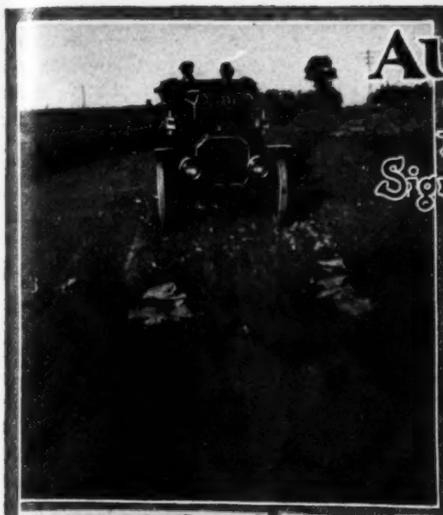
On the other hand, the Maxwell Junior is capable of speeds ranging from four to 40 miles an hour, and in the hands of the average horse owner in the country would probably cover 1,000 miles every three months, due to its far greater range of travel, making convenient and easy visits that are practically out of the question with a buggy, owing to the distance. To cover 1,000 miles with the Maxwell the makers figure would cost $108, which could be spread over a year or not as the owner desired.



The 10-Horsepower Motor That Furnishes the Power.

Autoing's Limitations In Uruguay

By Sigmund Krausz



One so-called road

One real road

Uruguayan farm houses

The old and the new

MONTEVIDEO, Uruguay, Sept. 1.—Upon unpacking my car in the customs house at Montevideo I found that one of the fenders had received large rust spots through some corroding liquid which had run over it. They said it was saltwater, but how in the world saltwater could have penetrated into the tight case is more than I can understand, for they pack well at the Dayton factory, as I had learned through actual experience at Havana and Rio de Janeiro. However, the damage was so well repaired by a native firm of coach builders that I can only pay them the highest compliment.

This matter was not the only thing, though, to ruffle my temper at the customs house. While I was not subjected to so much running from Pontius to Pilate, as in Rio de Janeiro, I was told, to my great surprise, that there was a duty on automobiles in Uruguay. I had been informed just to the contrary by the consul of that country in New York, whom I had interviewed shortly before shipping my car. True, the duty is not prohibitive, but it is always a disappointment to have to pay for something which you expected to get for nothing.

The worst thing, however, was to come, before I could clear my car entirely. There was a charge for lighterage against it, and this lighterage amounted to more than the whole freight charge from New York to Montevideo. While the latter was only slightly over $100, the robber barons of the lighter trust—for there are trusts down here as well as in the United States, although they operate under different names—demanded more than $125 for taking the car from the big steamer to the dock, and there was a charge of another $20 for hauling it under cover to the customs house.

I tried to protest, first mildly, then energetically, but to no purpose. The company would listen to no protestations; there was a fixed tariff, they said, and since the law gives them a lien on the goods until the charges are paid, there remained nothing but to "cough up," as they say at home.

After these gall-raising experiences, I was somewhat recompensed by finding an excellent up-to-date livery garage—by the way, the only one in Montevideo—where I was able to hire a closed stall, including cleaning of the car for a price which I do not care to mention, for fear it would bring the blush of shame on the cheeks of some of our garagemen in the United States. At the same place was an excellently equipped machine and repair shop, for which, however, I have so far never had any use, in spite of some considerably hard driving.

I wish to dwell a little on the fact that, whereas I had a lot of trouble and waste of time in Rio de Janeiro before I could get a license for car and driving, this matter was arranged here with slight effort, and, what is more, there were no fees and taxes connected with the procedure. In the Brazilian capital they had amounted to more than $60. But, then, they do not have to support such a lot of loafers here as one finds in the municipal offices there.

This garage, being the only one in town, as mentioned above, I had immediately a chance to get fairly well acquainted with the types prevailing in Montevideo, a city of about 300,000 inhabitants. They are French, French, and again French, with a slight sprinkling of English, German and American machines. The latter are nothing to be proud of, however, consisting of a few cheap vehicles. No wonder there is a prejudice against them when one sees them running next to such machines as Renaults, Panhards, Mercedes, etc. The Stoddard-Dayton was an eye-opener to the connoisseurs and laymen here with its first appearance on the street, and even the daily papers noticed the fact that there was "a new coon in town."

The majority of Montevidean cars are of the limousine type, though why this should be is a conundrum, since they have only two to three months of so-called winter here. During the rest of the year it is warm and hot. Just now it is the winter season, but aside from rainy days, there is nothing in the temperature to indicate this. There is no frost and the temperature does not range lower than 10 to 15 degrees above zero (celsius). It can, in my judgment, therefore, be only the characteristic hankering of the Latin-American race to "show off" which makes the limousine popular.

I don't expect that the auto sport will ever take deep root here, as there are no attractive drives within the city limits. The pavement of the streets, too, on which, by the way, you have to drive on the left, is not too seductive. It consists of

granite blocks, not badly laid, but still this is not the ideal pavement for motoring. Another thing which does not tend to make auto driving in the city enjoyable is the number of big heavy electric street cars which shoot past the crossings at an amazing rate of speed. Why they should be allowed such speed in narrow, rectangular streets is more than I can comprehend, when the limit for automobiles is to about seven miles within the city. The Prado, a small park, and the Parque Urbano are the only places where one can drive without having his nerves at high tension all the time. But there is not a mile of driving in the two parks together.

On the other hand Montevideo has a great advantage over Rio de Janeiro. It has at least some good macadamized country roads in its immediate vicinity. There are several of them in various directions, on some of which, I am told, one can get as far as 50 kilometers from town. I have tried several, for example, the ones leading to the Barra Santa Lucia, to Colon, and to Pando, a village of about 35 kilometers from the city.

The Barra Santa Lucia is a pretty river scene, which I could only admire from some distance, as the road at its end was torn up by repairmen and the heavy rains of the preceding two or three days had made the mud there knee-deep. Having several guests with me, among them ladies, I did not care to get "stuck," and gracefully yielded to the request of the latter not to go any further. The stopping place is pictured in one of the photographs accompanying this article.

The drive to Pando, however, proved more enjoyable, in spite of various adventures, and, it is of this I want to speak now. I had invited Mademoiselle Mathilde de Lerma, the celebrated Spanish prima donna, who is at present singing in Montevideo, and who wants to take a Stoddard-Dayton machine with her back to Spain, to enjoy a spin with me in the country, and there were several more in the party. We started from the Hotel Lanata, where we all stopped, and soon gained a fairly good country road a short distance from the city limits. It was a magnificent day, corresponding to our late October days, and the air was filled with ozone. Past avenues of eucalyptus trees, large cactus hedges, and American barbed-wire fencing we went at a moderate speed which allowed us to admire the undulating landscape, with its scattered adobe farm houses off the road, the numerous cattle grazing on the *estancias,* and here and there, the distant view of the La Plata river, which is here about 80 miles wide and looks certainly like the ocean.

From time to time we met heavy two-wheeled carts drawn by four or six oxen, or three horses harnessed abreast, on one of which the driver was riding. The wheels of these carts were not less than 6½ feet in diameter, and, although these vehicles are not heavy and do not carry great loads, the thick mud covering the hubs and spokes plainly indicated the reason why so many draft animals were attached to them. As a rule, the lanes and side roads of Uruguay are either a sea of mud or sand, and I would not advise any automobilist to leave the main roads around Montevideo for exploring purposes.

The majority of the animals we met were evidently not used to the sight of an automobile, and more than once they turned the carts into the shallow ditch beside the road, in spite of the efforts of their drivers and our own moderation of speed and noise. Frequently we stopped the motor altogether to allow the frightened beasts to pass. This we had to do specially when we met a *gaucho* on a young and refractory horse. These Uruguayan cowboys in their wide trousers and flowing *ponchos* are picturesque characters, and only their splendid horsemanship enabled some of them to keep the saddle while their mounts shied and reared at the puffing and whirring of the approaching auto. By stopping the car and allowing a horse-drawn vehicle to come out of a lane and up to the automobile I was able to take a picture showing the modern and ancient method of transportation in South America.

Once we met several oxen and cows crossing over the road. We approached slowly. Then, two or three of them stopped in the middle of the road turning their heads in our direction. As we came nearer one of the beasts faced the car, and, lowering its head, prepared to charge. The two ladies of the party uttered frightened shrieks, and I saw already in my mind a smashed radiator and an aching bull's head, when the chauffeur pressed the exhaust pedal and the sudden gunfire-like clamor frightened the animal so that it turned tail and jumped over the cactus hedge lining the road. A young calf, though, got so scared that it ran directly in front of the auto and only our slow gait, together with a quick turn of the steering wheel prevented a catastrophe.

"I am passionately fond of a *corrida,*" remarked Senorita De Lerma, a minute later, "but I do not care to be myself the matador in an automobile. Perhaps we better turn back." But we had arrived within a mile or so from Pando, a picturesque village, and, all of us being rather hungry, it was decided to push on. We reached the *fonda* of the village a few minutes later, where the car was immediately surrounded by crowds of natives. It was Sunday, and, although the host of the inn could not possibly have figured on unexpected guests, we were soon served with a native dinner, consisting of *cossido* (boiled beef and pork, garnished with cabbage, potatoes, sweet *patates,* slices of pumpkin, and *garbanzos*) and cold *mulita.* The latter is a dish, the taste for which does not need much cultivation, if one can overcome the repugnance it causes at first to those who never have seen and tasted it before. *Mulita* is the native name of the armadillo of natural history, the little South American animal which carries its armor on its back and is thus protected against its enemies, except men, who close up its holes and then catch it running. The *mulita* is roasted in its iron-hard shell and served with it. It is the view of the animal lying on its back complete with head and tail that at first tends to turn the stomach of a *gringo,* but if once you have tasted its tender, juicy meat, which has the flavor of roast pork or goose, you are bound to like it.

After dinner we visited the little church and had some fun with the dark-skinned, black-eyed and pretty country girls, who innocently expressed their admiration for the new kind of vehicle. Some of them indicated that they would like to have a ride, and we packed a load into the car, taking them around the plaza. This did not prove a good policy, for the whole crowd now clamored for a turn around the square, and, to escape their importunities, we had to start on our way back.

We reached Montevideo after several more incidents similar to those related further above, and with slightly different experiences from those gained on American country roads.

MARYLAND MAY GRANT RECIPROCITY.

BALTIMORE, Md., Oct. 5.—Numerous suggestions for controlling autos in this State were brought out at the conference of the Maryland Automobile Commission with Governor Crothers. One of the principal subjects discussed was that in reference to licenses of owners from other States who bring their cars into Maryland. Col. Sherlock Swann argued that it was unfair to make an automobile owner from outside of Maryland who came into this State with his machine for a few days pay as much for a license as the man who has the use of the State roads the entire year. All the members of the commission and the Governor agreed on this matter.

Walter B. Brooks then recommended that a 20-day period could be granted to outsiders with automobiles for their stay in Maryland without a license, and the commission decided to make this recommendation. The commission also recommended the alloting of licenses so that a man who took a license out in September of the current year would not have to pay as much as the man who waits until January to procure a license.

The placing of signboards throughout the State was also advocated. On the question of taxing autos Governor Corthers said he wanted to tax machines up to the neck, but not so high as to impose a hardship upon the owners. The Governor declared all revenues should be used in the interest of good roads.

NEWS FROM SOME ACTIVE CLUB CENTERS

BUFFALO CLUB DOING MUCH GOOD WORK.

BUFFALO, Oct. 12.—The Automobile Club of Buffalo still continues to grow in a way which will keep the rival clubs on the jump to equal its membership. When September ended the rolls showed 1,390 names on the list with 37 more waiting to be acted upon. The most notable achievment of the club as recorded for September was the final completion of arrangements with the Canadian authorities whereby any member of the Automobile Club of Buffalo may enter Canada, at any point on the Niagara Frontier, on presentation of his membership ticket, free of any bond. The customs official will make out a duplicate card and hand one to the tourist, good for a three days' stay in Canada.

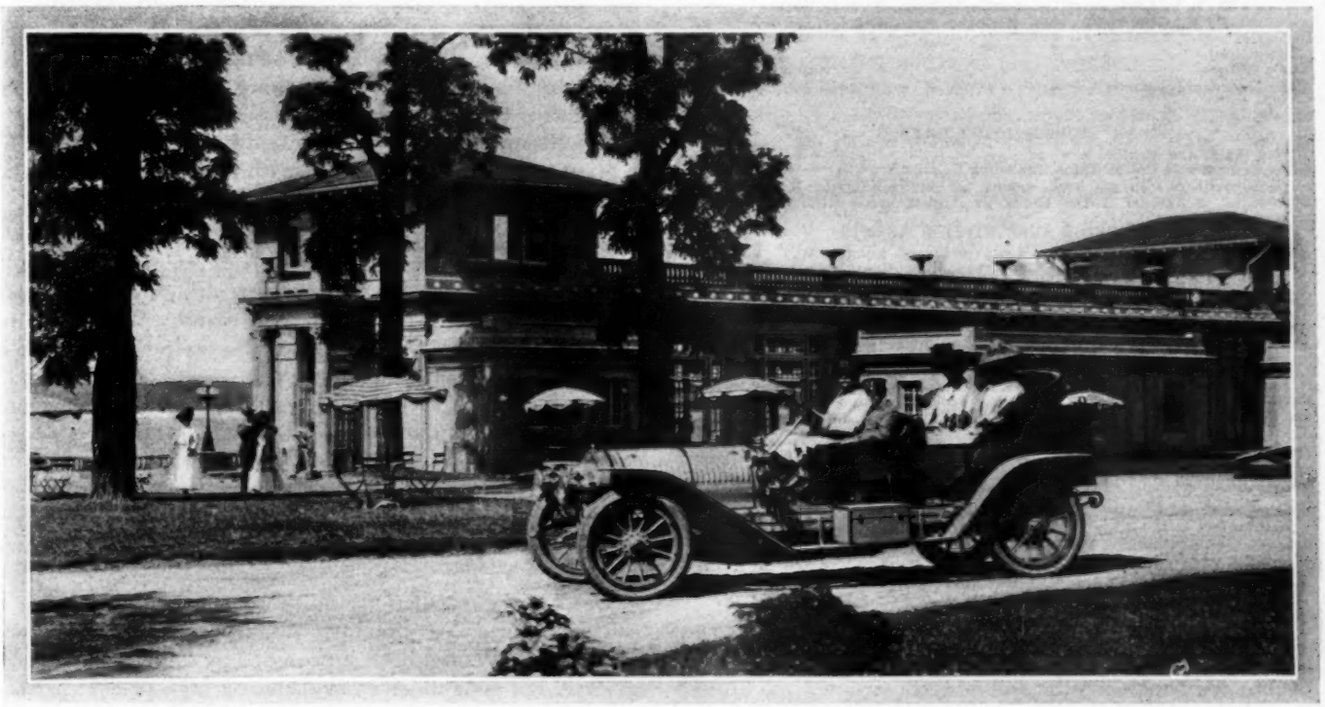
The club committee on road signs has continued its good work, and the route to Lockport and Niagara Falls, via Pekin, has been re-marked, and danger signs placed where required. The new signs for the road between Fredonia and Jamestown, via Cassadaga, have arrived and will be erected before the middle of the month. The club has been troubled in their work of placing road signs by people who have maliciously torn them down or defaced them, and has made a standing offer of $50 reward for information leading to the arrest of such persons.

MINNEAPOLIS CLUB WILL BUILD A HILL.

MINNEAPOLIS, Oct. 5.—Members of the Minneapolis Automobile Club are all enthused over the proposed plan to erect, to order, a permanent hill on the club property at Bloomington, for hill climbing contests. The plan has been talked for a couple of weeks, and the proposition of financing the deal will be taken up before the directors of the club at the next meeting.

As planned the hill would be half a mile long and having a grade varying from 10 to 24 per cent. The course would be laid out along the Minnesota Bottoms directly in front of the clubhouse, so that the races could be watched from start to finish from the porches of the clubhouse or from grandstands to be erected on the spacious lawns. It is thought sandstone block will be used to assure permanency of construction and identical conditions year after year.

The building of a hill "to order," so to speak, has not been done, it is believed, by any other club in America, and the members of the Minneapolis Club are all anxious that the honor of being first should fall to this club. Consequently, with all this interest it is very likely that on Saturday, July 3 next, the hill will be the scene of a contest which will attract national attention.



Chairman J. deM. Thompson of A. A. A. Racing Board and Vanderbilt Cup Commission at Chateau des Beaux Arts, Huntington, L. I.

WHAT ONE CONNECTICUT CLUB IS DOING.

HARTFORD, CONN., Oct. 12.—The recently organized Automobile Club of Willimantic is a live body, as is evident from the activities of the club of late. For instance, an effective sign-posting campaign has been inaugurated, and the good and bad spots will be indicated as the case may be. A special meeting of the club was held recently and action was taken regarding the betterment of the city streets. A club run is slated for the near future, and also a game dinner at some favorite resort to be decided later. It was voted to purchase a score of A. A. A. radiator emblems, which will be placed on the cars of members as soon as received. A strenuous season is anticipated, and, as Secretary Lincoln expresses it, "in the spring we are going to try to do some other good things which will attract attention.

A. C. A. PROVIDES FOR NEW MEMBERSHIP.

NEW YORK, Oct. 12.—Two new classes of membership have been established by the board of governors of the Automobile Club of America. First the bars were let down to women, and second, a clubroom membership was established. Women have formerly only been allowed in the ladies' rooms under the stairs. By the action they are to have all the privileges of ordinary members, except that they cannot vote or hold office, nor may they use the restaurant and assembly room. Hopes are held out that the proposed extension of the clubhouse over the recently purchased property on Fifty-fifth street will provide them with better facilities later.

The clubroom membership is limited to 100 and can be secured for $25 a year without payment of any initiation fee.

THE AUTOMOBILE

Vol. XIX Thursday, October 15, 1908 No. 16

THE CLASS JOURNAL COMPANY
Thirty-ninth Street Building, 231-241 West 39th St.
New York City

H. M. SWETLAND, President

EDITORIAL DEPARTMENT
A. G. BATCHELDER, Managing Editor
R. F. KELSEY, Associate Editor C. B. HAYWARD, Engineering Editor
W. F. BRADLEY, Foreign Representative

BUSINESS DEPARTMENT
A. B. SWETLAND, Business Manager
LOUIS R. SMITH FRANK B. BARNETT
W. I. RALPH, 1035 Old South Building, Boston, Mass.
C. H. GURNETT, 1200 Michigan Ave., Chicago, Ill.

Cable Address - - - - - - - - - - - - - - - Autoland, New York
Long Distance Telephone - - - - - - - - - - 2046 Bryant, New York

SUBSCRIPTION RATES:
United States and Mexico - - - - - - - - - - - - - One Year, $3.00
Other Countries in Postal Union, including Canada - - - - One Year, 5.00
To Subscribers—Do not send money by ordinary mail. Remit by Draft, Post-Office or Express Money Order, or Register your letter.

FOREIGN SUBSCRIPTION AGENTS:
ENGLAND:—W. H. Smith & Sons, Ltd., 186 Strand, London, W. C., and all their railroad bookstalls and agencies throughout Great Britain; also in Paris at 248 Rue de Rivoli.
FRANCE:—L. Baudry de Saunier, offices of "Omnia," 20 Rue Duret, Avenue de la Grande Armee, Paris.
GERMANY:—A. Seydel, Mohrenstrasse 9, Berlin.

Entered at New York, N. Y., as second-class matter.
The Automobile is a consolidation of The Automobile (monthly) and the Motor Review (weekly), May, 1902, Dealer and Repairman (monthly), October, 1903, and the Automobile Magazine (monthly), July, 1907.

Copies printed in 1905 - - - - - - - - - - - - - 730,000
" " in 1906 - - - - - - - - - - - - - 791,000
" " in 1907 - - - - - - - - - - - - - 888,900

FIRST OF THE MOTORWAYS IS OPENED.

An epoch in motor-driven land transportation is marked by the opening of the Long Island Motor Parkway, a race course only incidentally and not constructed exclusively for high speed competition, as is the generally erroneous impression. First of many motorways for the use of automobiles is the Long Island road, and therein William K. Vanderbilt, Jr., has placed to his credit something which logically should come from a family whose members for three generations have figured in the history of transportation. If man is to get the full worth of the latest form of individual transport, he must supply a road whereon he can take advantage of its time-saving possibilities. All other arteries of travel must be avoided, including the highway on which the horse will continue for a longer period to plod its weary way; the dangers of railroad crossings at grade must be obliterated and the rights of the pedestrian cannot be overlooked, for while many will use the automobile, a still greater number may never be so fortunate. 'Tis a clear and open road that the automobile requires, and, given such, man will enjoy and employ his new means of progress to its fullest reasonable extent; not a few will go beyond the limits of prudence—and, frequently, pay the penalty.

When its plans are entirely consummated, the Long Island motorway will supply an uninterrupted route across the island which, owing to its proximity to the metropolis, its destined to be the home of millions with business and social interests in New York City. Some day the State will supply such motorways—for the ultimate form of all highway traffic is certain to be of the motor-propelled sort—but until that time arrives the owner of the automobile will not object to paying for the boon of an "open road" that is such in reality. The assured enormous population of Long Island is a guarantee of the ultimate financial success of its motorway, but those who have made it possible are not counting upon any substantial immediate return from their investment.

When automobiling will have attained some years to its being, and the events of its past will necessitate the telling so that the new generation can inform itself of that which is history, the chapter on the first of the motorways will make known to what great degree one William K. Vanderbilt, Junior, first prominent because of a racing cup bearing his name, added more permanently to his outoing fame by being the moving and responsible factor in the building of the first road in the world for the daily use of the automobile, which undertaking created an example that was soon followed by many such highways throughout the country, thereby aiding materialy in the growth of a great industry which carried with it far reaching effects.

* * *

PRESENT STATUS OF CLUTCH DESIGN.

Doubtless the weakest part of the design of early cars was to be found in the clutch, and many constructors instead of attempting to overcome the defects of the then standard type, the leather-faced cone, cast about for something entirely different. The result has been the development of a number of types, all of which appear to have proven equally successful when properly designed and constructed for the work to be done, the lack of which summed up the defects of early attempts. Time has shown that it was not the principle so much as the manner of its application.

Despite the predictions of those who found its use a difficult matter of practice in earlier years, the plain conical type has not been superseded by something of later growth, but is as much in evidence on high-priced cars today as it ever has been. It combines the manifest advantages of simplicity, light weight, low initial cost, and ease of repair, and while improvements in design have done much to perpetuate it, the adoption of cork as a friction material, either directly on the metal, or as a supplement to the usual leather facing, has been a factor of great importance in its retention. The multiple disc clutch, which is probably favored by a greater number of designers than any one other type, with the exception of the cone, represents a close approach to the ideal, for all designers are seeking a clutch that may be slipped under heavy loads without damage to itself, besides which it has the great advantage of a low inertia factor, not to mention its extreme compactness and the fact that it is self-contained and generously lubricated. Aside from these two types, which appear to be about equally favored, there are several modifications of band clutches which have been developed to a high degree of efficiency and reliability, and it is worthy of remark that the use of cork has influenced the development of these types, as well as of the disc clutch, where the number of plates employed is comparatively small.

A. A. A. IN QUARTERLY SESSION TAKES IMPORTANT ACTION

IF present plans materialize, and the American manufacturers of commercial vehicles come forward with a plenteous entry, there will be a notable first contest next Spring for the Powell Evans $2,000 trophy for commercial vehicles. This trophy, donated by Mr. Evans, who is president of the Automobile Club of Philadelphia, was formally accepted at the quarterly meeting of the Board of Directors of the American Automobile Association, held in New York City, Friday, October 9, with First Vice-President Lewis R. Speare, of Boston, presiding, in the absence of President William H. Hotchkiss, of Buffalo, who was unable to attend.

For the greater convenience of the association's membership at large, it was decided that the offices of the Touring Board should be removed to New York City in the near future and its work carried on from the general headquarters of the organization, at 437 Fifth avenue. Powell Evans was named as chairman of what hereafter will be known as the Touring, Information, and Maps Board, and Frank B. Hower, president of the Automobile Club of Buffalo, who has been chairman of the Touring Board, will become chairman of the Contests Board, which will succeed the Technical Board, and have charge of all contests other than racing and speed events, same to include all touring, technical, endurance and economy contests, as well as hill climbs.

The Racing Board, as heretofore, will continue in charge of speed contests.

Various recommendations of President Hotchkiss were adopted, including an enlargement of the national board of directors, so that every club throughout the country will have a member on the board.

R. D. Inman, of Portland, Ore., was elected a director to represent the Portland Automoble Club. A long list of individual members was also passed upon, and action was taken providing that any individual member whose application is filed after this date will be extended membership privileges covering the fiscal year ending December 1, 1909.

President Hotchkiss was authorized to appoint a committee of five to represent the A. A. A. on the National Conservation Commission, at the suggestion of Gifford Pinchot, chairman of this government body.

The Executive Committee having previously referred to President Hotchkiss and Secretary Elliott the solution of the California situation, their recommendation was that provision be made for two State bodies in a commonwealth of such great geographical extent, and this plan was adopted.

The advisability of issuing a monthly or quarterly bulletin will come up for consideration at the next meeting.

The offer of the Show Committee of the American Motor Car Manufacturers' Association to allot space to the A. A. A. at the Grand Central Palace exhibition in New York City, was accepted. It was also decided to hold a general meeting of the association at the time of this show and again during the Madison Square Garden show in January. Application will be made to the Trunk Line Association for reduced railroad rates during the weeks of these shows. Adjournment was to October 23.

TWENTY AND PERHAPS MORE FOR THE VANDERBILT CUP

AS the entry list for the Vanderbilt Cup race, which is to be held on the Long Island Motor Parkway course on the 24th, now stands, there are twenty entries in all, representing America, Germany, France and Italy, and there appears to be good reason to believe that there may be further entries in the fortnight still intervening. Of the total number now in hand, thirteen are American cars, consisting of three Thomas cars, two Locomobiles, two Knox representatives, two Mathesons, and one each of the Chadwick, Acme, Mora and B. L. M. makes. The seven foreign cars are the three Mercedes, a Brasier, an Isotta, a Hotchkiss and a Renault.

Up to the present, all but six of the drivers have been selected. Salzman will pilot one of the Thomas cars, the other two still being without drivers, while Robertson is to have charge of a Locomobile, but his running mate for the other car of the same make is still to be chosen. The Knox entries will be handled by Basle and Bourque, and the two Mathesons will have as pilots, Chevrolet of former track fame, and J. B. Ryall. There is no driver as yet for the Mora. Willie Haupt will handle the Great Chadwick "six," while Strang has been nominated for the Renault and Patsche is to pilot the Acme entry. Of the Mercedes team, two are to be handled by professionals. W. K. Vanderbilt, Jr.'s car being piloted by Luttgen, while Stricker will have the Graves entry. Foxhall Keene will drive his own car as usual.

It is rumored that Montague Roberts will be put at the wheel of one of the added Thomas cars. Kilpatrick seems a likely pilot for the Hotchkiss, in view of the fact that he has been identified with the efforts of that make this season in straightaway and 24-hour contests. Although no announcement of the final choice of driver for the second Locomobile, Jim Florida was given a try-out in the Philadelphia race of last Saturday.

Joseph Tracy has concluded a contract with C. W. Matheson to look after the Matheson camp. Tracy will pitch the Matheson camp at Gifford's. Stricker was formerly a demonstrator for the late Alexander Fisher, of New York, when he was the importer of the Rochet-Schneider. Strang gives Stricker's instructions credit for most of his success as a driver.

Lytle's high average of 64 miles an hour, made in the Isotta last Saturday, has shown what can be done over the new course, and much in the way of record-breaking is to be expected of the Vanderbilt race. Lytle's performance has also created a strong speed craze among autoists generally, and the demand for permission to use the Parkway stretch has been so great that it has been thrown open from 8 A. M. to 6 P. M. daily, the fee being $2 for that time, but no night driving will be permitted until after the Vanderbilt. Motorcycle riders who have had an opportunity to try the course are anxious to have a big motorcycle event.

In the Vanderbilt race itself, six of the American cars will carry Diamond tire equipment, and to add further zest to the race, the Diamond Rubber Company has offered $1,000 in prizes for winning cars shod with its tires. This sum is divided into a first prize of $500, the second, third and fourth to finish receiving $250, $150 and $100 respectively. The tires will be mounted on Diamond demountable rims and will be inflated ready for use.

The entry list and drivers as complete up to October 12 are given out as follows:

Car.	Country.	Entrant.	Driver.
Acme	America	Cordner & Flinn	Patschke
B.L.M.	America	Thos. Williams	Williams
Chadwick	America	Chadwick Eng'g Wks	Haupt
Knox	America	Knox Auto Co.	Basle
Knox	America	Knox Auto Co.	Bourque
Locomobile	America	Locomobile Co.	Robertson
Locomobile	America	Locomobile Co.	——
Matheson	America	Matheson Co.	Chevrolet
Matheson	America	Matheson Co.	Ryall
Mora	America	Mora Co.	——
Thomas	America	E. R. Thomas Co.	Salzmann
Thomas	America	E. R. Thomas Co.	——
Thomas	America	E. R. Thomas Co.	——
Brasier	France	H. Payne Whitney	——
Hotchkiss	France	Hotchkiss Import Co.	——
Isotta	Italy	C. V. Brokaw	Lytle
Mercedes	Germany	W. K. Vanderbilt, Jr.	Luttgen
Mercedes	Germany	Robert Graves	Stricker
Mercedes	Germany	Foxhall Keene	Keene
Renault	France	Paul Lacroix	Strang

HOW A NEW JERSEY COUNTY GAVE AN AUTOING LESSON

MADISON, N. J., Oct. 10.—New Jersey automobilists turned out in great numbers for the big automobile tour "Around the World" in Morris County, Saturday, and despite the threatening weather the affair was a success. It is estimated that $3,000 was realized from the sale of tickets, fancy articles, etc., which amount would certainly have been doubled but for the cold, threatening weather during the afternoon, and the rain that brought things to a stop fully two hours earlier at night.

The tour was arranged for the benefit of the Y. M. C. A. of Morristown and Madison and the Girls' Club and Boys' Brigade of Chatham. Each passenger was charged $1 for the entire tour of fifteen miles, which included stop-over privileges at the different stations. These included the beautiful estate of James M. Gifford at Chatham, which was decorated as Peking, China; the home of C. F. Wheeler in Main Street, Chatham, representing Washington; the home of James H. McGraw, Prospect Street, Madison, which was attired to represent Madrid; the home of C. M. Decker at Convent, which represented Yokohama, Japan; F. C. Blanchard's large estate in the Woodland Road, near Chatham, which was decorated to represent Berlin, and L. B. Tompkins' home at Morristown, which place represented Constantinople, Turkey. Each of these places was gorgeously decorated in the native colors they represented, and were all the more attractive by the costumes of those in charge of the various booths. Aside from the different stations as above described, the tourists were given an opportunity of shopping at the Y. M. C. A. buildings at Madison and Morristown. Among the many attractions at the latter place were the two Arabian horses of Homer Davenport, which were on exhibition at the Tompkins estate. The route of the tour carried the sightseer past the historic Washington headquarters in Washington Avenue, Morristown, one of the chief objects of interest.

The affair was arranged by a group of prominent residents of the three New Jersey towns, who were organized as the International Touring Company. These included James H. McGraw, president; Willard W. Cutler, Thomas W. Cauldwell, Homer Davenport, Alfred Evans, James A. Webb, H. S. Heitkamp, and Charles M. Lum, vice-presidents; Edward P. Holden, Jr., secretary; Edward D. Conklin, treasurer; Herbert Strong, general manager; W. Reginald Baker, superintendent; A. B. Leuder and H. B. Stopford, division superintendents; Melvin Jackson, general ticket agent; H. D. Ogden, general passenger agent; Emory N. Faulks, general freight agent; Carrol B. Merritt, general advertising manager; Theodore B. Morris, general publicity agent; F. A. Trowbridge, master mechanic, and W. F. Day, Jr., courier-in-chief.

Aside from it being a huge charitable entertainment, the affair was a gigantic automobile carnival as well, and the society folk of Morris County were out in force. Never before was there such a large procession of automobiles assembled in that section, and the beautiful macadam roads connecting the three towns resembled a Vanderbilt Cup course. More than one hundred machines were loaned for the day, and these were kept on the go from 2 o'clock in the afternoon until 7 o'clock at night, when it began to rain. Many of the nearby residents kept their cars in service until late in the evening, and the tourists were given an opportunity of reaching their respective starting points. There was much congestion during the afternoon, and many more cars could have been pressed into service, but the crowd was very well taken care of.

Not a single accident marred the event in any way, and it was voted a grand success. Aside from this, it demonstrated the true merits of the modern automobile, and will be the means, no doubt, of relieving much prejudice that has heretofore existed. The people of Morris county, hundreds of whom took advantage of the fifteen-mile run, were shown the need of better legislation. As an example, a large percentage of the residents of the towns in that fashionable section are devoted to their horses and use the roads extensively, and the immense number of automobiles traveling along the fifteen-mile course was the means of demonstrating the necessity of lights on all vehicles, while the roads themselves need more lights.

ONE THOUSAND AUTOMOBILES IN LINE.

Probably one of the most notable features of the Deep Waterways convention in Chicago last week was the outing given the 5,000 delegates in automobiles supplied by Chicago owners for use of the Association of Commerce. When the 1,000 machines were lined up they extended over six miles of pavements, representing a total valuation of over $3,000,000.

HARTFORD AUTOISTS HELP OPEN A CONNECTICUT BRIDGE

HARTFORD, CONN., Oct. 11.—There has just been successfully concluded a three days' celebration of the formal dedication of the new stone bridge across the Connecticut River. The structure is said to be one of the finest stone bridges in the world. In connection with the celebration there was an industrial procession. The Hartford Rubber Works Company, the Electric Vehicle Company, the Pope Manufacturing Company, the Whitney Manufacturing Company—in fact, all concerns identified in one way or another through their product with the automobile industry—were represented. Of the good accomplished by the demonstration there is not the slightest doubt. As celebrations go, it was typically New England. The automobile parade in the evening was a gorgeous affair.

Cars and commercial vehicles were gorgeous in their embellishment. One that is particularly deserving of mention is a light electric truck used by a local Swedish society, by means of which was shown a model of a Viking ship, and so gracefully did the mimic craft spin over the ground that the mode of propulsion remained a mystery to the uninitiated. Of the commercial vehicle section proper, the Hartford Rubber Works had a very unique float. The big electric truck of the company was decorated in keeping with the event, and the sides bore mammoth trade-marks in electric lights in the form of winged tires. The Pope Manufacturing Company was present with the big Waverly electric truck, on which was carried a 1909 model. The Electric Vehicle Company used the Riker electric truck, above which was an illuminated electric sign, and two old-time models were carried. The touring and runabout section was notable for many reasons. The seasons of the year were portrayed by various cars and decorated accordingly. President W. F. Fuller, of the Automobile Club of Hartford, was marshal of the procession in the Pierce-Arrow "six."

In all, about 600 cars participated, about three times as many as had been expected, and 50 motorcycles. So long was the procession that long after the start of it had reached the center of the city the finish had not passed that point to the turn, about three miles distant.

The Automobile Club of Hartford after the parade entertained the visiting autoists at the Allyn House. During the smoker there was formulated the Aero Club of Hartford, of which H. P. Maxim was chosen president, C. H. Gillette secretary, and F. W. Dart treasurer. Charles F. Glidden was the guest of the Automobile Club of Hartford, and the formation of the Aero Club is practically due to his visit.

FIRST SPACE ALLOTMENT OF A. M. C. M. A. SHOW.

Last week the American Motor Car Manufacturers' Association held a three days' session for the purpose of allotting space for the "Great White Auto Show" which opens on New Year's Eve. Because of the large demand for space—more than 70 different American and foreign makers applying to be assigned floor room, besides the accessory manufacturers—those in charge found that they would not be able to give each exhibitor the amount first thought possible, a reduction of 30 per cent. being necessary for vehicle makers while the producers of parts were taken care of as expected. The following were among those lucky enough to draw space in the court of honor:

Reo, Stoddard-Dayton, Mitchell, Ford, Maxwell, Premier, Mercedes and Panhard. The other cars assigned spaces included the DeDion, Delahaye, Clement, DeDietrich, DeLaunay, Fiat, C. G. V., Isotta, Renault, Lancia, Hotchkiss, Jackson, National, Overland, Marion, Mora, Atlas, Buckeye, DeLuxe, Pennsylvania, American, Brush, Marmon, Simplex, Motorcar, Gaeth, Gearless, Kiblinger, Holsman, Welch, Abendroth, Moline, St. Louis, Austin, Moon, Chadwick, York, Oakland, Midland, Acme, Regal, Coates, Anderson, Benner, McCue, Wayne Works, Middleby, Speedwell, Lane, Kissell, Schacht, Omar, Claude E. Cox, Gyroscope, Page, Cameron, Sultan and Cleveland.

Among the commercial vehicles are Rapid, Grabowsky, Abendroth, Mack, Bristol, Lansden, Hart-Kraft, Gram-Logan, American Truck, Pittsburg, Reliance, and DeDion.

CARTERCAR BUILDERS EXPAND GREATLY.

DETROIT, Oct. 12.—The Motorcar Company, builders of the friction driven Cartercar, has filed papers for an increase in the capitalization of the concern to $350,000, as well as for a change of title, the corporation being known in future as the Cartercar Company. The large plant of the Pontiac Spring & Wagon Works, Pontiac, Mich., has been acquired, and the work of transferring the machinery and stock now in the old Motorcar company's factory, at Twenty-first and Baker streets, Detroit, will be undertaken at once, and it is expected that the new plant will be working full blast on the 1909 product within 30 days. The new plant is excellently situated, being located at the junction of the Detroit, Grand Haven & Milwaukee and the Michigan Airline railroads. The buildings are brick and concrete, five stories high, and cover about two acres of ground.

The leading Cartercar model for 1909 will be of the runabout type, and is designed to list at $1,000; it will be known as Model K, and its specifications are such that there is little doubt of its popularity during the coming season. The Model G roadster will be continued for another season, with a few improvements here and there, while an entirely new touring car, known as Model H, will be put out to succeed this year's Model A. The Cartercar Company will also continue to build the Pontiac, which is a high-wheeler listing at $675.

IMPORTS SHOW INCREASE FOR AUGUST.

During the month of August the foreign manufacturers seem to have done an increasing business in this country as shown by the Government reports for that month. In the month of August, 1907, only 69 machines valued at $229,704 were imported, while for the same month, this year, 179 cars with a valuation of $280,970 were shipped here. These figures show that the price per car was a great deal lower this year than last, being about half, which is probably due to the fact that some of the smaller foreign chassis is becoming more popular in this country and also the fact that a large number of the taxicab chasses come from France.

Houston, Tex.—The Southern Motor Car Company has purchased the lease, machinery, tools, garage and good-will of the Empire State Motor Company, and in the future will be located in the former garage of that concern at Texas avenue and Caroline street.

PACKARD LOSES BIANCHI IN JERSEY DAWN.

If the man responsible for the New Jersey auto law, one Frelinghuysen by name, was really in earnest in his endeavor to prevent speeding by its misguided provisions, he must have had a powerful bad dream in the wee sma' hours of Sunday last, for the peace of that Sabbath morn in Jersey was rent by two automobiles keeping as far above the legal speed limit as their motors and their drivers' nerve would let them. They were a Bianchi and a Packard, at least that is the order in which they got away, the former crossing the imaginary line near West End station, a part of Long Branch, at 5:52 A. M., the Packard leaving five minutes later. When they came in the order was reversed, the Packard leading the way by a considerably greater margin than favored it at the start. Henry Weisel and M. R. Rothschild, two New York brokers, were the offenders, and the run-off was the result of many wagers as to the ability of the cars. Mr. Rothschild drove his Packard, while the Bianchi was entrusted to a chauffeur, and none of the essentials of a first-class event, such as timers, starter and referees, was missing. The course was 60 miles through a number of Jersey's seashore villages, the distance being covered by the Packard in 1:10:30,1-5, despite the drizzle.

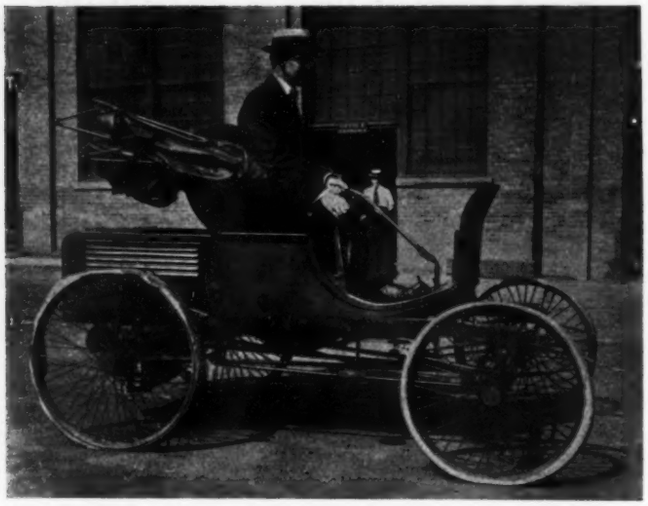
ONE MAKER'S HUNTING TRIP.

Henry Ford recently took a ten-day hunting trip, the greater part of his traveling being done in a Model T Ford car. As the first of these cars happened to be ready about the time Mr. Ford wished to start on his trip he found it very convenient to give one of them this extra trying out in Northern Wisconsin. The trip was made via Chicago to Milwaukee, and to Iron Mountain, where several days were spent, then back again to Detroit, a total of 1,357 miles as shown by the speedometer. During the whole trip the magneto alone was depended upon, as no battery was taken at all. The following record of gasoline and oil consumption for the trip is rather interesting:

From	To	Miles.	Gasoline.	Oil.
Detroit.....	Chicago	345	15	5
Chicago.....	Milwaukee	118	6 1-2	1-2
Milwaukee.....		30	1 1-2	1-2
Milwaukee.....	Iron Mountain..	285	14	3
Iron Mountain.		25	1	1-2
Iron Mountain.	Milwaukee	292	17	1
Milwaukee.....	Grand Haven....	Boat	..	..
Grand Haven..	Detroit	262	13	1
		1357	67	11 1-2

The average for trip was 20 miles per gallon of gasoline and 85 miles per gallon of oil. From this table it can be figured that the cost per mile per passenger was a little over ⅛ of a cent and if depreciation, etc., is added, less than ⅔ of a cent per mile per passenger.

Mr. and Mrs. Clarence Mackay, Who Are Renault Users.



Original Winton That Was Shown in Philadelphia Parade.

ORIGINAL WINTON IN QUAKER CITY PARADE.

In the industrial parade during Founders' Week at Philadelphia, October 7, one of the floats carried what is claimed to be the first gasoline automobile made and sold in America. This is a single-cylinder Winton phaeton, bought by Robert Allison, of Port Carbon, Pa., on April 1, 1898. For several years the car has been in the museum at the Winton factory. It appeared in exactly the same condition as when Mr. Allison drove it last; the old single-tube tires are rather the worse for wear, but the mechanism is still in working order. In fact, before the car was shipped, Mr. Winton started the motor and drove it around the factory yard.

MINNEAPOLIS TO HAVE AN AUTO ROW.

MINNEAPOLIS, MINN., Oct. 12.—Recent developments among the local agencies indicate that Minneapolis will have a "Motor Row" worthy of the name. Five of the large companies have closed deals involving heavy investments for sites and elaborate buildings on Hennepin avenue, the main thoroughfare of the downtown district, and building operations have been started. The five concerns thus far in the movement are the Stoddard-Dayton; the Minnesota Motor Sales Company, handling the "E-M-F," Studebaker, and Babcock electrics; the Maxwell-Briscoe combination; the Pence Auto Company, handling the Stevens and Buick; and the local branch of the Winton Motor Carriage Company. These are among the largest agencies in the Twin Cities, and such a general movement to a new locality carries weight.

The Stoddard-Dayton location, next to the corner of Hennepin avenue and Ninth street, is regarded as an ideal one. Its new garage building, to cost about $20,000, has been started.

Across the street will be the Minnesota Motor Sales Company's location, and here also a very showy and complete building will be erected to cost about $20,000.

The Pence Auto Company have acquired a site formerly owned by the Mutual Life Insurance Company, where the foundation was put in several years ago for a 21-story building. This project was abandoned, however, so in taking over the site the Pence Company gets a good start on its new six-story building.

The local branch of the Winton Company is having a garage and sales building erected on North Eighth street within a short distance of Hennepin avenue. This building will be so constructed that additional stories may be added in the future.

The Maxwell-Briscoe Company has also located in this same vicinity and plans are being drawn up for a $20,000 building, which will also be used as the Northwestern distributing plant.

Many dealers in accessories and other auto dealers have watched the progress of events, and there are several deals now on foot leading to the location in this neighborhood.

CHANGING THE DARRACQ TAXICAB.

PARIS, Oct. 1.—Several modifications have been made in the Darracq taxicabs familiar to New Yorkers by reason of their exclusive use by the New York Taxicab Company. The gilled tube radiator across the fore end of the frame has been abolished in favor of a dashboard radiator with thermo-syphon water circulation. The bonnet takes the form that up to the present has been almost exclusively associated with Renault cars.

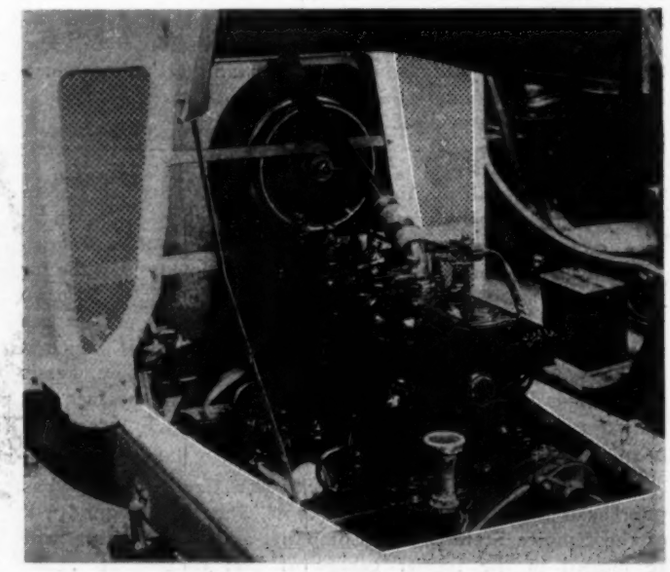
The new radiator consists of a series of circular plain copper tubes, there being twelve tubes in each circle and four or five circles. On the dashboard, and in the center of the inner circle of tubes is a flat blade ventilator driven by a belt direct from the flywheel at one-third increase on the engine speed. The dashboard space left free on each side of the rear of the bonnet does not allow a view of the radiator, as on most dashboard-radiator cars, this being enclosed by sheet metal super-imposed by a perforated plate, the object of the enclosure at this point, of course, being to increase the draught of the fan. The passage of the steering column through the dashboard has not allowed the radiator to be mounted in a central position, but slightly to the left. As no tubes are visible owing to the front covering plate, this peculiarity does not in any way mar the appearance of the car.

Advantage has been taken in the change of cooling arrangements to improve on the lubrication of the engine. On the 1907 taxicabs the flow of oil from the dashboard lubricator was assured by pressure from the exhaust, a system which possessed more simplicity than efficiency. On the new models the Lefebvre lubricator is of the force feed type, being direct driven off the ventilator shaft; the one belt operates fan and lubricator.

There has inevitably been a slight modification of the engine by the abolition of the water pump, but this is really the limit of the changes on the power plant. Transmission and final drive also remain as before, but suspension has been changed, the transverse rear spring being abolished in favor of three-quarter elliptics, a type of suspension which is being more and more generally adopted by European constructors. There has been a strengthening of the steering gear and modifications on the connecting bar to allow of taking up play with greater facility, thus assuring the parallelism of the wheels.

A series of three hundred of the improved models are about to leave the Darracq factory for service in New York and other American cities.

Atlanta, Ga.—Within the next few weeks the new garage being built for the White Company will be ready for occupancy. Their representative, E. W. Gans, will make this the distributing point for the Southern States.



New Thermo-Syphon Radiator Used on Darracq Taxicab.

ONE STORY OF A CLEVELAND RACE MEET.

CLEVELAND, Oct. 13.—Dashing and tearing around the track, rattling like an alarm of musketry, flying around dangerous curves, yet always holding true to the track, roaring monsters of iron and steel, emitting flashes of flame and smoke, kept spectators and officials keyed up to a highly nervous strain for two days last week.

Women shrieked and all but fainted as the daredevil drivers risked life and limb in their mad efforts to be first at the tape! Strong men grew sick at heart as the powerful machines seemed doomed to destruction, and laughed with relief when the cars escaped as by a miracle. The whole crowd swayed with the racers as they tore around the turns and held their breath when one car or the other gained a slight advantage. Never had such wonderful work been witnessed upon a race track! All the drivers were striving to do their best (?), each wishing to cleave for himself a niche in the hall of fame. And what roars went up when first one and then the other won during the heart-rending two days. Oldfield, Christie, Kelsey, and Soules are names that will live forever in the hearts of Cleveland motorists!

[This was received in THE AUTOMOBILE'S mail early Monday morning, and upon wiring our Cleveland correspondent to find out what it was all about, it was discovered that the "National Circuit Meet" was held in that city last week. No records were broken, as the track was not fast on either day.]

FRENCH AUTOISTS ANNOUNCE SAILING DATES.

PARIS, Oct. 8.—Passage has been secured for the French teams taking part in the Grand Prix of the A. C. A., at Savannah, on the steamship *La Lorraine*, leaving Havre Saturday, October 24. The drivers will consist of Szisz, of the Renault team; Duray, of the Dietrich firm, and Rigal and Hautvast, the two Bayard-Clement drivers. Each driver will have his own mechanic, and one or two helpers will be taken over. Six racing cars will be shipped on the same boat, the Renault firm sending two and Bayard-Clement three, though racing one and two, respectively.

October 14, Victor Breyer, the European representative of the American Automobile Association and manager of the first Dieppe Grand Prix, will sail from Cherbourg in order to attend the Vanderbilt Cup race and the Savannah event.

It is declared by Henry Fournier that two Italas will be entered in the Savannah Grand Prix, one of which will be handled by himself, and the other by Cagno. In the Bologna race in Italy, Fournier proved himself one of the fastest drivers, and but for missing the turn might have been very near the winner.

R. G. KELSEY IN DIFFICULTY WITH HAYNES CO.

CLEVELAND, Oct. 13.—After having made a good showing in the track races here on Friday, and while he was tuning up his car that night preparatory to doing still better work the following day, Robert G. Kelsey, of New York, the well-known driver, was taken into custody by the Cleveland police, charged with being a fugitive from justice, the arrest being made by request of the Chicago police. The warrant was sworn out by the Haynes Automobile Company.

Kelsey will say little, but he is mad clear through, and insists that the Haynes people are taking into the criminal courts a case which belongs under civil jurisdiction. All day Saturday motorists of this city who know Kelsey offered to bail him out, but under the charge bail cannot be accepted. Kelsey says he will make things warm for somebody.

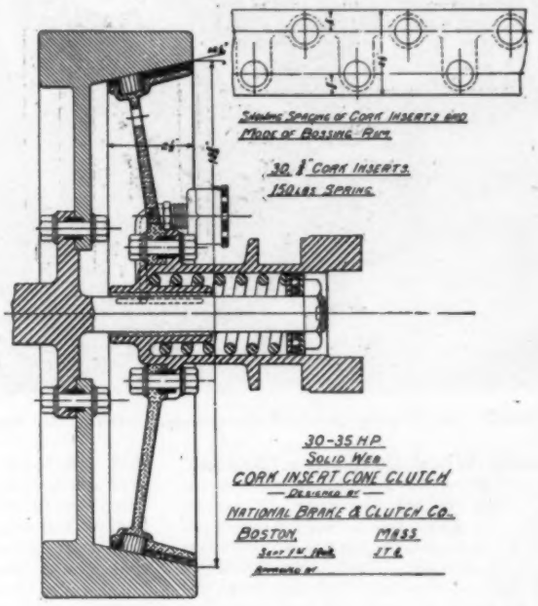
INTERNATIONAL ROAD CONGRESS OPENS.

PARIS, Oct. 12.—M. Barthou, the French Minister of public works, officially welcomed the delegates to the first International Good Roads Congress, which was formally opened to-day. The delegates represent 24 different countries.

DRAWINGS OF CORK INSERT CLUTCHES.

Editor THE AUTOMOBILE:

As the demand for cork insert clutches is constantly increasing and as the designers of these clutches have not always the necessary data to bring the best results, our engineer has prepared plans of three clutches of 20-24, 30-35 and 45-50-horsepower, respectively, embodying the results of three years' experience in designing these clutches and indicating the angle and width of face, diameter of



cone, area of cork surface, weight of spring, etc., required to give the best results, and we are forwarding to the automobile manufacturers drawings of these in reduced size and will furnish full-size drawings to engineers or manufacturers (without charge therefor) where they will be of use, and we suggest that the publication of this letter or a statement of its contents may be of value to some engineer or prospective manufacturer who may not otherwise have an opportunity to receive these drawings.

NATIONAL BRAKE & CLUTCH CO.,
LAWRENCE WHITCOMB,
Treasurer.

Boston, Mass.

NEW JERSEY'S BIG CLUB TO CHANGE NAME.

NEWARK, N. J., Oct. 13.—It is very probable the name of the New Jersey Automobile and Motor Club will be changed to the New Jersey Automobile Club at the annual meeting of the organization. At the last meeting of the trustees a resolution to that effect was passed, and the matter was referred to the special committee consisting of Secretary A. B. Massena and Dr. James R. English, which was appointed some time ago to revise the by-laws of the club. The club was originally organized to admit motorcyclists as active members, but the by-laws have since been changed so as to admit only automobile owners, hence the word motor is superfluous. It is not likely that there will be any objection to the change.

The new club house will be formally opened on Thursday evening of this week. A delightful program, which will take the nature of a house warming, has been arranged, and several hundred of the members have notified Secretary Massena of their intention to participate in the festivities.

FORT GEORGE CLIMB ON ELECTION DAY.

The New York Automobile Trade Association has postponed its Fort George hill climb, originally scheduled for next Saturday, to Election Day. It has assurance that the Board of Aldermen ordinance giving the permission will be signed by Mayor McClellan. A previous ordinance of the Board of Aldermen intending to grant permission for the climb had failed to provide for police surveillance or to mention the name of the promoting organization. For this reason Mayor McClellan had vetoed it.

Arthur Lee Trying Out a Four-cylinder Maxwell for the Jericho Sweepstakes.

Salisbury Wheel Company's "Annual."—In keeping with its established custom, the Salisbury Wheel Company of Jamestown, N. Y., gave its annual three days' entertainment to its customers at the company's camp at Lake Ctautauqua the latter part of last week, and nothing was left undone to make the visitors feel that they had had the time of their lives before they got through. Among those present were the following: R. Harry Croninger, Penn Automotor Co., Bryn Mawr, Pa.; Benjamin Brisco, Maxwell-Brisco Motor Co., Tarrytown, N. Y.; B. J. Walker, Erie Malleable Iron Co., Erie, Pa.; Mr. Harris, Driggs-Seabury Ordnance Co., Sharon, Pa.; W. J. Vandervoort, Moline Auto Co., Moline, Ill.; J. A. VanWie, Overland Auto Co., Indianapolis, Ind.; H. W. Hayden, Dayton Motor Car Co., Dayton, O.; W. S. Gorton, Standard Welding Co., Cleveland, O.; H. W. McDonald, W. H. Vanduesen and J. M. Edsel, of the E. R. Thomas Co., Buffalo; B. B. Covert, Covert Auto Co., Lockport, N. Y.; G. W. Atterbury, Autocar Equipment Co., Buffalo, N. Y.; S. E. Babcock, Babcock Electric Co., Buffalo, N. Y.; Frank Barnett, representing *The Automobile* and *Motor Age;* L. W. Palmer, Jamestown, N. Y.; T. G. Meachem, New Process Rawhide Co., Syracuse, N. Y.; Mr. Grunauer, secretary of the Auto Manufacturers' Credit Association; Charles Backus, Western Malleable Steel Co., Detroit, and E. D. Sherman, S. H. Penfield, C. A. McCutcheon, C. A. Pickard, E. D. Cook and Fletcher Goodwin, of the Salisbury Wheel Co.

Why Pierce Transmission Is Changed.—Speaking of the change from the progressive gear, operated by a small lever on the steering column, to the side-lever operated selective gear, which will be a feature of the Pierce cars for the coming season, an announcement from the George N. Pierce Company, Buffalo, is as follows: "Much greater significance than appears at first glance is contained in the change in the transmission on all the new model Pierce-Arrow cars. Heretofore cars of this make have been equipped with a three-speed progressive transmission with the gear-shifting lever under the steering wheel. Now, however, all five Pierce-Arrow models will have four forward speeds, and the selective type of transmission, while the gear-shifting lever will be at the side, and will work in an H double slot. Several reasons have been responsible for the retention of the former type after the selective had been proven a success. Among the more potent of these was the fact that it has been the belief of the George N. Pierce Company that the progressive system, with the lever under the steering wheel, is the simplest and most convenient style for the man not thoroughly up in motoring. In other words, the Pierce company held that, in former years, the general autoing public had not advanced in its knowledge of conditions to a point where the selective type would prove more serviceable than the progressive."

Autoists Combine to Fight Thieves.—The automobile owners in Fort Wayne, Ind., have been troubled to such an extent of late by automobile thieves that they have formed the Fort Wayne Automobile Protective Association. At the first meeting over $500 was subscribed to a fund which should be at the disposal of certain officers of the association to use in the apprehension and conviction of all auto thefts and for the purpose of taking some action against the careless throwing of glass and tacks on the highway. The members also pledged themselves to do all in their power to aid in the crusade against those persons owning automobiles who persist in disregarding all speed regulations to the detriment of all others.

Buys Beaver Engine Plant.—The Filer & Stowell Company, Milwaukee, Wis., has secured control of the Beaver Manufacturing Company, builders of Beaver engines, and will conduct the business in the future, gradually increasing the output to about 25 engines per day. A new four-cylinder, 40-45-horsepower, vertical engine will be added to the line, the same design as the present R. A. type. The Filer & Stowell Company's interest in the Beaver Company furnishes ample capital to do business on a large scale which was a much needed requisite of this rapidly growing business. New buildings are being constructed to take care of the increased output, and over one-half of next year's business has already been contracted for.

How One Company Does It.—A six-day conference for traveling mechanics of the Franklin Manufacturing Company, whose duty it is to instruct and assist Franklin dealers in the proper care of Franklin automobiles, has just closed, and the nine men who cover territories that represent all the United States left for their several quarters. The entire week was taken up in study of the 1909 models and their features augmented with talks given by Chief Engineer John Wilkinson and his staff. One day they took a trial of 225 miles in the 1909 models, and during the journey every man was given an opportunity to drive each of the various 1909 models.

Continentals Out of Smaller Races.—Manager Joseph Gilbert, of the Continental Caoutchouc Company, announces that the numerous races which are being held now have so interfered with the regular business of the company that the company will have to withdraw its support from the racing game, except for the large events.

Cleveland Taxicab Company.—The Cleveland Taxicab Co., with its factory in the old Geneva steamer plant at Geneva, O., will not have its new machines ready until the 1st of January. The factory is busy now, but no completed machines will be ready for some time.

Jones Speedometer.—The Jones Speedometer Company of New Rochelle, N. Y., has been incorporated with a capital stock of $100,000, for the manufacture of instruments, tools, machinery, etc.

Oakland, Pontiac, Mich.—The Oakland Motor Car Company, of Pontiac, has filed a certificate at Lansing, increasing the capital stock of the company from $200,000 to $300,000.

Made Record-Breaking Easy.—Herbert Lytle used Harris oil to lubricate the Isotta he drove to victory in last Saturday's Motor Parkway Sweepstakes.

IN AND ABOUT THE AGENCIES.

Rambler, Kansas City, Mo.—The Rambler Automobile Company has been organized with the following named as incorporators: W. L. Lacy, Estel Scott, George Devol, J. R. Nave and E. G. Anderson, the latter to act in the capacity of general manager. The new concern will handle the Rambler line exclusively and establish branches in this section.

American Locomotive, Chicago.—General Sales Manager James Joyce of the American Locomotive Automobile Company has completed arrangements whereby the Chicago branch will be located in the old Zion Tabernacle, at Twelfth street and Michigan avenue. Benjamin C. Day, who has been with the Winton Company for some time, will be in charge.

Lancia, Boston.—The Hol-Tan Company has decided that a Boston branch would be profitable, and have secured quarters at No. 66 Hereford street, where salesrooms will be opened within a few days. W. M. Hilliard, who has driven for the Hol-Tan Company for some time, will be in charge of the new branch.

Gray & Davis, New York City.—A branch of this well-known concern, which has its factory at Amesbury, Mass., has been opened at 377 West Broadway, near Broome street, the telephone number of which is Spring—2478. William H. Gray is in charge of the branch.

Continentals, New York State.—The Continental Caoutchouc Company, 1788-90 Broadway, New York City, has added one more distributing agent to their long list. The Albany Hardware & Iron Company, Albany, N. Y., will represent this company in the Northeast and middle part of New York State.

Lozier.—W. S. M. Mead, Eastern sales manager of the Lozier Motor Car Company, has established the following new agencies: Westcott Garage Company, Utica; A. C. Foss, South Norwalk, Portchester, Stamford and Greenwich; C. S. Ransom, Albany, and Newburg Auto Shop, Newburg, N. Y.

Franklin, Utica, N. Y.—The Franklin Motor Company has been organized with offices in the Commercial Travelers' building, to handle the Franklin cars in Utica. I. R. Gardinier, the former manager of the C. H. Childs & Company automobile business, has been elected president and general manager.

Acme, Savannah, Ga.—The Graham Automobile Company, of No. 14 Bryan street, has taken the Georgia agency for the Acme and some adjoining territory. This company has for its president and treasurer Charles Graham, with Thomas Halligan as secretary and general manager.

Cherry Autocab Company, New York City.—The Cherry Autocab Company, of New York has been incorporated to carry on a garage and sell and rent automobiles, with capital of $25,000. Incorporators: Leonard Stein, L. L. Dobbin and A. S. Gilbert, all of New York City.

The Consumer's Auto Supply Company, Pittsburg.—With C. D. Mandille, the former manager of the automobile department of Kauffmann's store, as president, and H. G. Kimmich as treasurer. This concern has opened up for business in the Bissel block.

Brush, Philippine Islands.—The Brush Runabout Company, of Detroit, Mich., recently made a shipment of samples of its product to H. R. Cooper & Company, Manila, Philippine Islands. This latter firm will represent the Brush interests in that territory through 1909.

Oakland, Indianapolis.—Charles R. Newby, formerly of the Olds Company, has organized the Independent Automobile Company, which will be located at 214 East New York street, Indianapolis. The new firm will carry a complete line of Oakland cars.

Jackson, Utica, N. Y.—Charles H. Childs & Company have arranged to act as distributing agents for the Jackson cars in New York State outside of New York City, and will establish branch agencies in all towns where the trade warrants it.

Mitchell, Indiana.—The agency for the Mitchell cars in St. Joseph and Elkhart counties, has been taken by George F. Eberhart, who will have his headquarters at 119 East Second street, Mishawka, Ind.

Acme, Philadelphia.—The Acme cars will be taken care of by the Theobold Motor Car Company, 608 North Broad street. This company has H. P. Childs for its president, and J. B. Theobold for manager.

Kissel Kar, New York City.—The Apthorp Motor Car Company, in addition to its garage on West Eightieth street, has opened a salesroom at 2250 Broadway, for the sale of Kissel Kars.

Spencer Pumps, Boston.—S. F. Heath & Company, 288 Columbus avenue, Boston, have been appointed New England distributors for the well known Spencer power tire pumps.

Moon, New York City.—Charles A. Duerr has removed the Moon Agency to quarters in the old Smith & Mabley building at Broadway and Fifty-sixth street.

A. W. Blanchard, New York City, has has been incorporated with capital stock of $25,000, for the manufacture of automobiles and supplies.

Midland Motor Car Company, Kansas City.—This concern has removed to its new quarters at No. 1608 Grand avenue.

Michelin, Philadelphia.—A branch of the Michelin Company has been opened at No. 320 Broad street by H. D. Benners.

PERSONAL TRADE MENTION.

"Pete" Estey, Studebaker Publicist.—Following the announcement to the effect that E. L. Pelletier, of the E-M-F Company, will handle the entire advertising of the Studebaker Automobile Company, as well as the E-M-F campaign, comes the further announcement that Mr. Pelletier has engaged as assistant advertising manager for the Studebaker, F. L. ("Pete") Estey, who for several years has been attached to the automobile department of the Chicago *Inter-Ocean*. Mr. Estey is known to almost every newspaper man in any way interested in the development of the automobile industry. Mr. Pelletier plans to superintend all Studebaker publicity and advertising from the Detroit office, and Mr. Estey will follow up stunts and contests, reporting them in detail.

James F. Patton, superintendent of the F. B. Stearns Co., Cleveland, has resigned to go into the repair business for himself in that city. Patton is very well known in the trade, having been connected with the Stearns company for the past five years. He was presented with a diamond pin and Morris chair upon leaving the factory.

George B. Levy, who has been secretary and sales manager for C. A. Coey & Company, of Chicago, for two years, is leaving that company to go into business for himself in a concern which will be known as the Standard Automobile Supply Company, No. 1428 Michigan avenue, Chicago.

W. F. Reynolds, Southwestern representative for the H. H. Franklin Mfg. Company, finds business in general throughout his territory to be in a most prosperous condition. Automobile dealers are enthusiastic over the outlook.

Frank Lowry, a former Indianapolis newspaper man, well known in the East and Middle West, has signed with the Moline Automobile Company, of East Moline, Ill., to handle publicity and advertising.

F. C. Morgan has been appointed sales manager of the American Automart, 1619 Broadway, New York City, where extensive improvements are being made for the coming winter.

B. F. Blaney has resigned as Boston representative of the Selden car.

GUY VAUGHAN JOINS BENEDICKS

Guy Vaughan, manager of the mechanical department of Wyckoff, Church & Partridge, the Stearns New York agents, well-known as a crack race driver, was married Thursday, October 8, at New Rochelle, N. Y., to Miss Helen Knapp. When the newly married pair started on their wedding journey, which will comprise an automobile trip through the Berkshires and New England, they were pursued in cars by fun-loving tormentors, but managed to outfoot their pursuers.

DEATH OF VETERAN WRITER.

L. C. Boardman, former automobile editor of the Chicago *American*, died in that city on October 7. Mr. Boardman was a graduate from the ranks of cycle newspaperdom, in which he was rated as a pioneer, his bicycle page in the New York *Recorder* bearing a national reputation. He leaves a widow, herself a journalist in the same lines as those of her late husband.

BUSINESS DIFFICULTIES.

The Association of Motor Car Dealers, New York City, which has offices in the *Times* Building, New York City, has made an assignment to John H. Winans. The concern, which was incorporated for $10,000 in March, 1907, has assets consisting of cash in banks, $1,603; accounts, $2,100, and office furniture with the value not given.

A. L. A. M. 1909 HANDBOOK.

The work of publishing the sixth annual "Hand Book of Gasoline Automobiles" is well advanced, and the book will be issued before many weeks. This hand book is the hall mark of the Association of Licensed Automobile Manufacturers, and this year it will be larger and even more attractive in appearance than it has been in the five previous editions.

There was held last week at the rooms of the A. L. A. M. a meeting of the committee which deserves the credit for the merit of the book in the past. Among those present were Thomas Henderson, of the Winton Motor Carriage Company; William E. Metzger, of the Everett-Metzger-Flanders Company; Charles Clifton, of the George N. Pierce Company, and E. P. Chalfant, assistant manager of the A. L. A. M.

Firestone Salesmen at the Firestone Convention Recently Held at Akron, O.

INDEX TO ADVERTISERS

Abrams-Mason Co..... 70
Acetylene Gas Illuminating Co. 51
Acme Motor Car Co..... 54
Adam Cooks' Sons..... 84
Adams Co..... 54
Aerocar Motor Co..... 54
Air-Tight Steel Tank Co..... 91
Ajax-Grieb Rubber Co..... 90
American Chauffeur..... 71
American Locomotive Motor Car Co..... cover
American Motor Car Co..... 70
Anderson Forge & Machine Co. 56
Ashtabula Bow Socket Co..... 58
Atlantic Coast Line..... 97
Atwood Mfg Co.....cover
Audel & Co..... 59
Austin Automobile Co..... 54
Austro-American Separator Co. 90
Autocar Co..... 87
Auto Car Equipment Co..... 82
Auto Pump Co..... 65
Auto & Supply Mfg. Co..... 61
Avery Portable Lighting Co... 77

Baldwin Chain & Mfg. Co..... 56
Barndt-Johnston Auto Supply Co..... 58
Baum Iron Co..... 67
Beaver Mfg. Co..... 51
Behen - Faught Motor Car Equipment Co..... 50
Bellfuss Motor Co..... 58
Bi-Motor Equipment Co..... 50
Black Mfg. Co..... 67
Bliss-Chester Co..... 50
Blue Book 60
Borbein Automobile Co..... 64
Bosch Magneto Co..... 88
Boston Auto Gage Co..... 51
Bowser & Co., S. F..... 59
Boyle & Co., John..... 98
Bretz & Co., J. S..... 64
Brown & Co., S. N..... 58
Brownell Motor Co., F. A..... 56
Buckeye Jack Mfg. Co..... 59
Buckeye Mfg. Co..... 54
Buffalo Specialty Co..... 89
Buob & Scheu..... 58
Burnett-Compound Spring Co.. 69
Burrowes & Co., E. T..... 61

Cadillac Motor Car Co..... 54
Cameron Car Co..... 80
Canton Drop Forging Co..... 56
Central Brass & Fixture Co... 62
Chadwick Engineering Works. 54
Chalmers-Detroit Auto Co..... 53
Cleanola Co. 80
Chelsea Clock Co.....cover
Chicago & Alton Ry..... 64
Coes Wrench Co..... 44
Columbia Lubricants Co..... 67
Comptoir d'Innovations pour Automobiles 50
Conn. Tel. & Elec. Co..... 75
Continental Caoutchouc Co.... 55
Continental Motor Mfg. Co.... 63
Corbin Motor Vehicle Corp.... 71
Corcoran Lamp Co..... 51
Cornish Friedburg Motor Car.. 54
Correspondence School of Motor Car Practice..... 50
Cowles & Co., C..... 50
Cullman Wheel Co..... 56

Davies Co., J. P..... 84
Dayton Motor Car Co..... 85
Dayton Rubber Mfg. Co..... 55
De Luxe Motor Car Co..... 54
Diamond Chain & Mfg. Co.... 56
Diamond Rubber Co..... 52
Dietz Co., R. E..... 65
Dixon Crucible Co., Joseph.... 59
Dorris Motor Car Co..... 71
Dow Tire Co..... 67
Duplex Coil Co..... 50

Eberman Auto Appliance Co.. 61
Echo Horn Co..... 6?
Edison Auto Accessories Co... 50
Edmunds & Jones Mfg. Co.... 36
Eldredge Electric Mfg. Co..... 51
Elite Mfg. Co..... 70
Ellsworth, J. M.....102
Elmore Mfg. Co..... 93
Empire Automobile Tire Co... 82
Everett-Metzger-Flanders Co.. 85
Excelsior Supply Co..... 61
Excelsior Tire Co..... 46

Fay, Thos. J..... 93
Firestone Tire & Rubber Co... 84
Fisk Rubber Co..... 69
Flentje, Ernst..... 67
Forest City Motor Car Co..... 86
Fort Pitt Motor Car Co.....54
Franklin Mfg. Co., H. H.....105
French Mfg. Co..... 59

G & J Tire Co..... 80
Gabriel Horn Mfg. Co..... 94
Gaeth Automobile Co..... 98
Gearless Motor Car Co..... 70
Geiszler Bros..... 50
General Accumulator and Battery Co..... 63
Gibney & Bros., Jas. L..... 50
Glass-Front Cleaner Mfg. Co.. 68
Gray-Hawley Mfg. Co..... 68
Gray & Davis.....cover
Grout Auto Co..... 97
Gyroscope Automobile Co..... 54

Hall Machine Co.....103
Ham Mfg. Co., C. T..... 63
Hardy Co., The R. E..... 64
Harris Oil Co., A. W..... 49
Hartford Suspension Co..... 51
Haws, Geo. A..... 59
Haynes Automobile Co..... 76
Healy Leather Tire Co..... 56
Heinze Electric Co..... 65
Herschell-Spillman Co..... 56
Herz & Co..... 55
Hess-Bright Co..... 99
Hicks Speed Indicator Co..... 70
Hoffman, Geo. W..... 51
Holley Bros. Co..... 51
Holsman Automobile Co..... 65
Holtan Co..... 79
Hopewell Bros..... 50
Hotel Albany..... 84
Hotel Rochester 66
Hotel Tuller..... 84
Hotel Woodstock 70
Howard Motor Works..... 54
Hoyt Electrical Ins. Co..... 66

Ideal Chest Protector Co..... 50
Indestructible Steel Wheel Co. 51

Jackson Automobile Co..... 54
Jeffery-De Witt Co..... 50
Jeffery & Co., Thos. B.....111
Jones Speedometer..... 51

K. W. Ignition Co..... 94
Karl & Co., Adolph..... 55
Keystone Lubricating Co....cover
Kimball Tire Case Co..... 62
Kissel Motor Car Co..... 72
Kokomo Electric Co..... 89
Konigslow, Otto..... 56

Lear Automobile Co., Oscar... 54
Leather Tire Goods Co..... 55
Life Publishing Co..... 50
Lipman Mfg. Co..... 50
Lobee Pump Co..... 51
Locke & Co..... 80
Lockwood Bros..... 68
Locomobile Co. of America.... 54
London Auto Supply Co..... 58
Long Arm System Co..... 69
Long Mfg. Co..... 70
Loring & Son, J. W..... 85
Lucas & Co., John..... 58

Maple City Mfg. Co..... 61
Marvel Mfg. Co..... 89
Mason Motor Car Co..... 71
Masury & Son, John W..... 86
Matheson Motor Car Co..... 91
McCord & Co..... 59
Mechanical & Elec. Mfg. Co.. 61
Merritt & Co..... 56
Michelin Tire Co..... 55
Midland Motor Car Co..... 71
Miller & Starr..... 58
Miller, Chas. E..... 62
Mitchell Motor Car Co..... 54
Model Automobile Co..... 54
Moline Automobile Co..... 71
Monitor Mfg. Co..... 89
Moon Motor Car Co..... 54
Morgan & Wright..... 96
Mosler & Co., A. R..... 58
Moss Photo Engraving Co..... 88
Motor Car Equipment Co..... 61
Motorcar Co..... 85
Motz Clincher Tire & Rub. Co. 55
Muller, Albert..... 58
Mutty Co., L. J..... 81
Myers Auto Top Co..... 58

National Motor Vehicle Co.... 83
National Welding & Mfg. Co.. 83
Neustadt Auto & Supply Co... 63
Never-Miss Spark Plug Co.... 65
N. Y. Sporting Goods Co..... 59
N. Y. & N. J. Lubricant Co.... 88
New Departure Mfg. Co.....100
New Idea Sales Co..... 61
New Process Rawhide Co..... 85
Nordyke & Marmon Co..... 54
Northway Motor & Mfg. Co.... 56
Nuttall Co., R. D..... 56

Oakland Motor Car Co..... 74
Ofeldt & Sons..... 51
Olds Motor Works..... 54
Overland Automobile Co..... 96
Owen & Co., R. M..... 55

Packard Electric Co..... 83
Packard Motor Car Co.....108
Page-Storms Drop Forge Co.. 47
Palmer & Singer Mfg. Co..... 54
Parish & Bingham..... 56
Parker Mfg. Co..... 51
Parker, Stearns & Co..... 56
Pennsylvania Auto Motor Co.. 87
Perfection Non-Skid Climber Co. 63
Perfection Spring Co..... 51
Perfection Wrench Co..... 50
Peugeot Frères 104
Picrome Hide Co..... 56
Pierce Engine Co..... 54
Pioneer Brass Works..... 56
Pirelli & Co..... 55
Portland Garage Co..... 51
Premier Motor Mfg. Co..... 78
Prest-O-Lite Co.....101

Quimby Co., J. M..... 54

Raimes & Co.....50
Rauch & Lang Carriage Co.... 87
Regal Motor Car Co..... 71
Remy Electric Co..... 51
Republic Rubber Co..... 55
Richardson Engineering Co.... 56
Robert Instrument Co..... 59
Robinson & Son Co., Wm. C... 51
Rock Island Tool Co..... 84
Rockwood Mfg. Co..... 58
Royal Equipment Co.....83-59
Rushmore Dynamo Works..... 72

Safety Device Co..... 87
Salisbury Wheel & Mfg. Co.... 50
Samson Leather Tire Co..... 51
Schug Electric Co..... 68
Selden Motor Vehicle Co..... 92
Shaler Co., C. A..... 6?
Shawver Co..... 61
Shayne & Co., C. C..... 95
Sireno Co..... 51
Slama Tire Protector Co..... 66
Spacke Machine Co., F. W.... 91
Spare Motor Wheel of Am... 68
Speed Changing Pulley Co.... 88
Speedwell Motor Car Co.....100
Spicer Universal Joint Mfg. Co. 56
Splitdorf, C. F..... 94
Sprague Umbrella Co..... 81
Spring Strap Co..... 63
Standard Co..... 62
Standard Welding Co..... 66
Stanley & Patterson..... 81
Star Speedometer Co..... 90
Stearns Co., F. B.....109
Stevens-Duryea Co..... 99
Stewart & Clark Mfg. Co..... 57
Stitch-in-Time Vulcanizer Co. 64
Streator Motor Car Co..... 85
Stromberg Motor Devices Co.. 95
Studebaker Automobile Co.... 55
Success Auto Buggy Co..... 55
Supplementary Spiral Spring.. 66
Swinehart Clincher Tire Co.. 68
Syracuse Alum. & Bronze Co. 86
Syracuse Chemical Fire Extinguisher Co..... 82

Thomas Motor Co., E. R..... 85
Timkin Roller Bearing Axle...101
Trenton Rubber Mfg. Co..... 50
Trimont Mfg. Co..... 66
Triple Action Spring Co..... 84
Trojan Hydro Pneumatic Wheel Co..... 82
Tucker, C. F..... 50
Turner Brass Works..... 56
Tygert Co., E. A..... 50

Uncas Specialty Co..... 69
Underwood Typewriter Co.... 94
Universal Tire Protector Co... 67

Vacuum Oil Co..... 86
Veeder Mfg. Co..... 92
Victor Clutch Compound Co... 56
Victor Tire Traction Co..... 55

Wachman Auto Mfg. & Supply 69
Warner Instrument Co.....110
Waverley Co.....107
Weed Chain Tire Grip Co..... 66
Welch Motor Car Co..... 70
Western Motor Co..... 69
Weston Elec. Instrument Co.. 83
Wetherill Finished Castings Co. 63
Wheeler & Schebler..... 73
White Co.....106
White & Bagley Co..... 85
Whitney Mfg. Co..... 80
Widmer Machine Works, C. A. 68
Willard Storage Battery Co... 69
Willett Engine & Carbureter Co. 84
Winton Motor Carriage Co....112
Wisconsin Tire Protector Co.. 69
Witherbee Igniter Co..... 51
Wyman & Gordon Co..... 47

York Motor Car Co..... 80

FOR UNMATCHABLE QUALITY BUY

COES

STEEL HANDLE MODEL WRENCH

91

91

THE WRENCH for Automobilists

High-grade quality in every detail of design, material, workmanship and up-to-date improvement. Excellence with extremely reasonable cost.

NON-BREAKABLE CASTINGS
NON-STRIPABLE THREADS
NON-TROUBLESOME PARTS

QUALITY
Through and Through.

Look for the name—COES

70 years splendid reputation worthily maintained right up to the present time as the World's Best Wrench Makers.

Write for "Wrench Book" free.

COES WRENCH CO., WORCESTER, MASS.